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UNITED STATES DISTRICT COURT
EASTERN DISTRICT OF WASHINGTON

NICHOLAS CRISCUOLO,

Plaintiff,

vs.

GRANT COUNTY, et al.;

Defendants.

Case No.: CV-10-470-TOR

PLAINTIFF'S MOTION IN LIMINE

Hearing Date: Feb. 24, 2014

Hearing Time: 9 a.m.

With Oral Argument

I. RELIEF REQUESTED

Plaintiff Nicholas Criscuolo, through his attorney of record Adam P. Karp, pursuant to the *Jury Trial Scheduling Order (Dkt. 104)*, moves for an Order in Limine ordering the defendants, defendants' attorneys, and defendants' witnesses not to directly or indirectly mention, refer to, interrogate concerning, or attempt to convey to the court or jury in any manner any of the matters set forth below and that defendants' counsel be instructed to warn and caution their clients and each and every witness to strictly follow any order entered by the court in connection with the following matters:

1. Other lawsuits, grievances, or claims against Mr. Criscuolo.
2. Mr. Criscuolo's criminal history and former sex offender status.

PLAINTIFF'S MOTION IN LIMINE - 1

ADAM P. KARP, ESQ.

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3. The outcome of the Chelan County investigation into this matter.
4. Alleged prior incidents involving Slyder.
5. Opinion by any witness that Slyder was part or all “pit bull” or reference to Ch. 6.06 MLMC (Moses Lake’s former Hazardous Dog law).
6. Referencing Google, Craigslist, classifieds, or the Internet for the proposition that there was a market value for Slyder at the time he died.
7. Describing Slyder as an “attack dog” based on the unscientific statement that all unneutered males are vicious.
8. Allowing Maddox to enter or remain in the courtroom.
9. Settlement negotiations or offers of compromise.
10. The nature of Mr. Karp’s practice, his affiliation or support of animal welfare, animal rights, or animal causes generally, his website, his personal or professional life generally.
11. The filing of this motion.

Mr. Criscuolo reserves the right to raise by subsequent oral motion any other matter as it may arise, including during the course of trial.

II. AUTHORITY

Pretrial motions to exclude evidence are designed to simplify the trial and to avoid the prejudice that often occurs when a party is forced to object in front of the jury to the introduction of evidence. The desirability of motions *in limine* have been recognized by several federal jurisdictions and commentators. *See generally United State v. Longorta*, 624 F.2d 66 (9th Cir. 1980); 21 Wright & Graham, Fed. Pract. & Proc., Evidence, § 5037, at 193-94 (1977). Such motions “avoid the obviously futile attempt to ‘unring the bell’” once the evidence has been presented before the jury. *Brodit v. Cambra*, 350 F.3d 985, 1005 (9th Cir.2003) (quoting *Kelly v. New W. Fed. Savs.*, 49 Cal.App.4th 659 (1996)). While all relevant evidence is

generally admissible, it may be excluded if the probative value is outweighed by danger of unfair prejudice, confusion of the issues, or misleading the jury. FRE 402, 403. Based on the foregoing principles and following analysis, Mr. Criscuolo moves *in limine* for the following evidentiary orders:

1. **The Court should exclude any evidence or reference to other lawsuits, actions, grievances, criminal actions, or potential claims against Plaintiff.**

Evidence of other lawsuits, claims, complaints or grievances against plaintiff is irrelevant to the present claim, misleading to the jury, and unduly prejudicial to plaintiff. FRE 401, 403. In addition, FRE 404(b) provides that “evidence of other crimes, wrongs, or acts is not admissible to prove the character of a person in order to show action in conformity therewith.” The purpose of trial is to adjudicate the loss under its own merits, and defendants should not be permitted to influence the jury by referencing or referring to other unrelated grievances, complaints, claims or lawsuits.

2. **The Court should exclude any evidence or reference to Mr. Criscuolo’s criminal history or his status as a former sex offender.**

Aside from a conviction for felony Possession of Stolen Property (2007), all other criminal convictions are more than ten years old and presumptively not admissible per FRE 609. While Mr. Criscuolo was convicted of consensual statutory rape nearly thirty years ago, and had to register as a sex offender, neither his felony conviction nor his former sex offender status are relevant whatsoever to this case involving the shooting of his dog. The danger of extremely unfair prejudice in admitting same far outweighs any probative value, a point explicitly anticipated by FRE 609(b)(1). Evidence of any other arrests or criminal investigations that did not result in a conviction should similarly be barred.

3. **The Court should exclude any evidence or reference to the outcome of the Chelan County Sheriff’s Office investigation.**

1 Evidence that Chelan County conducted an investigation and found no
 2 criminal violation by Dep. Lamens is irrelevant and unduly prejudicial. To begin
 3 with, this executive agency's determination has no preclusive effect on any court
 4 or jury. Moreover, Chelan County has no jurisdiction over this incident occurring
 5 within Grant County. Lastly, a jury may wrongly credit the Defendants with an
 6 "independent" finding of no liability.

7 **4. The Court should exclude any evidence or reference to Snyder's prior**
 8 **alleged altercations or behavior.**

9 Evidence of any alleged aggression by Snyder against other animals prior to
 10 the date he was slain lacks any relevance and serves only to unfairly prejudice Mr.
 11 Criscuolo. This motion is based on the alleged statements of Defendants' witness
 12 Whitney Harvey that, prior to the shooting, Snyder would charge her dog when
 13 unleashed between Mr. Criscuolo's car and his house; that she found her dog's leg
 14 broken after being tangled in a fence (though she admittedly did not witness any
 15 altercation with Snyder, was not home when the dog sustained the injury, and bases
 16 this on pure speculation); that Snyder got a hold of her cat's tail, resulting in injury;
 17 and that Snyder got into her yard and fought with her dog resulting in some wounds
 18 treated by antibiotics. Despite these allegations, on information and belief, Ms.
 19 Harvey never reported any of them until after Snyder was killed. Furthermore, Ms.
 20 Harvey did not witness the shooting.

21 This case turns on what actually transpired on Jan. 24, 2010, not on any prior
 22 date involving a nonparty to this litigation. If Mr. Criscuolo were a defendant in a
 23 lawsuit brought by a victim of a dog bite attempting to prove strict common law
 24 liability, prior notice of aggressive behavior might prove germane to the elements
 25 of *scienter* and vicious propensity per *Johnston v. Ohls*, 76 Wn.2d 398 (1968) and
Restatement (2nd) of Torts § 286 (1965)). Such is not the case. Prior alleged bad
 acts, which never even resulted in a civil infraction, civil suit, or criminal charge,

1 much less finding of fault, finding of committed, or a conviction, have no
 2 evidentiary value and should not be introduced. Rather, the jury should determine
 3 whether the way Snyder behaved on Jan. 24, 2010, related by percipient
 4 eyewitnesses, warranted his execution.

5 **5. The Court should exclude any evidence or reference to Snyder as “pit**
 6 **bull” and the City of Moses Lake’s “hazardous dog” law.**

7 Several individuals fancy themselves competent to opine as to Snyder’s
 8 breed composition, alleging that he was a “pit bull.” For instance, CCSO Det.
 9 Long, a Moses Lake Animal Control Officer, Cpl. Annalisa Dobson, arrestee Jason
 10 Kier, Defendant Beau Lamens, and others, have given such an unfounded,
 11 erroneous opinion. The Defendants no doubt hope that a bias against “pit bulls”
 12 will seize the jury as a basis to justify Snyder’s killing, even though no admissible
 13 evidence supports the conclusion that Snyder was part pit, or that pit bulls carry a
 14 greater predisposition for viciousness.

15 Indeed, a pending motion to strike concerns Defendants’ effort to refer to
 16 Snyder as part “pit bull,” drawing on hearsay from Tim Ayres notwithstanding Mr.
 17 Criscuolo’s strong denial that Snyder was other than a Lab mix. At the time of the
 18 shooting, the City of Moses Lake then had a Hazardous Dog Law, Ch. 6.06
 19 MLMC, that characterized pit bulls or pit bull mixes as “hazardous.” After Mr.
 20 Criscuolo sued the City and was prepared to file a motion for summary judgment
 21 to deem the law unconstitutional as applied and on its face, the City repealed the
 22 law in its entirety. **Dkt. 29**. Further, Snyder was never deemed a “hazardous” dog
 23 before his death.

24 As with obscenity standards, certain people profess to know it (here, a pit
 25 bull) when they see it. But how does one test the integrity of those epistemological
 moorings? Specifically, what happens when a court seeks to qualify a law
 enforcement officer as an expert in “pit bull dog” identification, and then allows

1 him to state that the defendant's dog substantially conforms to the breed standard
2 of an American Staffordshire Terrier? In *Cardelle v. Miami-Dade Code*
3 *Enforcement*, 17 Fla. L. Weekly Supp. 923a (2010),¹ precisely this happened.

4 Hearing Examiner Alfredo Bared allowed Officer Fernando Casadevall to
5 testify that Bertha Cardelle's dog Kitty, while admittedly a mixed breed, but a dog
6 never accused of aggressively threatening any person or animal or being used for
7 fighting, met the definition of a "pit bull" in having physically exhibited more than
8 fifty percent of the agglomeration of traits associated with the American
9 Staffordshire Terrier, Staffordshire Bull Terrier, and American Pit Bull Terrier.
10 Accordingly, Off. Casadevall subjected her to the restraints discussed above. He
11 utilized a "*Pit Bull Dog*" *Breed Evaluation Form* consisting of a checklist with
12 forty-seven conformation characteristics of the head, ears, eyes, muzzle, neck,
13 shoulders, back, body, legs, tail, coat, and size. Off. Casadevall claims to have
14 performed the in-person, live evaluation of Kitty from a distance of two-and-a-
15 half-feet over the course of half an hour, resulting in him scoring Kitty with thirty-
16 seven inculpatory characteristics and ten exculpatory, or 78.7% conforming. In
17 outlining his expertise, Off. Casadevall recited his certification with the Florida
18 Animal Control Association, training in pit bull fighting, working with his father in
19 treating animals (presumably his father was a veterinarian), breeding American
20 Staffordshire Terriers, and working fifteen years with the county, seven of which
21 he investigated pit bull complaints and cruelty calls.

22 The Florida Circuit Court (Appellate Division) rejected his testimony,
23 concluding:
24

25

¹ Per LR 7.1(f)(2-3), a copy of the unpublished opinion, offered only for persuasive value, is attached.

1 The first violation of due process concerns the hearing officer's erroneous
 2 qualification of Officer Casadevall as an expert in "pit bull dog" identification.
 3 "[A]cceptance or rejection of expert testimony is a matter within the sound
 4 discretion of the lower tribunal, and such decision will not be overturned on appeal
 5 absent a showing of abuse of discretion." *Gray v. Russell Corp.*, 681 So.2d 310,
 6 316 (Fla. 1st DCA 1996). The U.S. Supreme Court in *Daubert v. Merrell Dow*
 7 *Pharm.*, 509 U.S. 579, 594 (1993), set forth a series of criteria against which to
 8 measure scientific or technical methods and principles, which include: testing; peer
 9 review and publication; potential error rates; standards of operation; and general
 10 acceptance in the relevant community. Officer Casadevall offered nothing about
 11 the process of measuring the data for error rates, because no such statistics are
 12 kept; no objective standards for comparison exist. This Court finds that the County
 13 applies a subjective criteria and there is little or no peer review.

14 The hearing officer erroneously concluded, "This is a with 15 years and all of this
 15 background, so I would qualify as an expert witness."

16 *Cardelle*, at *5-*6. In dismantling the undeserved aura of veracity bestowed upon
 17 Casadevall by the Hearing Officer, the court noted:

- 18 1. Casadevall freely admitted that while he performed over 1000 pit bull
 19 inspections, he did nothing to gather data, perform quality control, or
 20 validate existing data.
- 21 2. Casadevall did not have his inspections peer reviewed.
- 22 3. Casadevall admitted that verification of his "pit bull dog" identifications
 23 falls outside his specialization as an animal control officer.

24 In other words, quantity does not create quality. *Id.*, at *7-*8. This 2-1 decision
 25 resulted in remanding the matter for a new hearing that would likely result in
 reversal of Kitty's designation, for without Casadevall's testimony given any
 weight, the examiner could only consider the testimony of Cardelle's veterinary
 experts Drs. Tess Wenzl and Manuel Morales, who both concluded they did not
 identify Kitty as a "pit-bull" and that Kitty did not conform to the breed standards.
Id., at *3-*4, *13. However, even the veterinarians would suffer from the similar
Daubert and FRE 702 challenge, given the latest scientific evidence on visual

1 breed identification.

2 In support, Mr. Criscuolo attaches the FRCP 26(a)(2) disclosure reports of
3 Drs. Victoria L. Voith and Kristopher Irizarry.² They confirm that visual
4 identification, even among professionals familiar with dogs, carries a significant
5 error rate and low inter-observer agreement. Furthermore, such identification lacks
6 predictive value in determining viciousness. Accordingly, without proper expert
7 credentials (again, the Defendants never designated any witness as an expert on
8 Slyder's breed identification), no defendant should be permitted to testify that
9 Slyder was pit bull, in whole or in part. Nor should the Defendants be permitted to
10 insinuate that Mr. Criscuolo was violating Ch. 6.06 MLMC.

11 **6. The Court should exclude any evidence or reference to Craigslist,**
12 **Google, the classifieds, or any other extrinsic source to determine an**
13 **alleged market value for Slyder.**

14 Subject to a contemporaneous motion to strike, the topic of whether Slyder
15 had a market value led the Defendants to ask the court to consult Google to find
16 such purported evidence. FRE 606(b)(2)(A) prohibits jurors from procuring
17 prejudicial extrinsic evidence. And while FRE 201 permits the court to take
18 judicial notice of adjudicative facts, and so instruct the jury to accept the fact as
19 conclusive (FRE 201(f)), such only applies with respect to facts not reasonably
20 disputed. That breeders may be selling puppies with varying pedigrees on the
21 internet in no way provides indisputable evidence that at the time Slyder was
22 killed, there were any ads for dogs of similar age (over 7), weight, characteristics,

23 ² These reports were prepared as part of Mr. Criscuolo's case against Defendant
24 City of Moses Lake, since dismissed. The purpose of providing these reports is to
25 inform the court of the legitimacy of demanding scientific rigor in the context of
admitting breed identification opinion by lay or even "expert" witnesses. No such
expert has been identified by the Defendants.

coloration, mixed breed composition, and other germane traits as Slyder. Additionally, the Defendants failed to identify any witness who would speak to such issue, much less any exhibit relative to same.

7. **The Court should exclude any evidence or reference to Slyder as an “attack dog” or predisposed to be vicious based on his unneutered status.**

Dr. Dick Maier allegedly told CCSO Det. Matheson that Slyder was an “attack dog” because he was an “unneutered male.” Putting aside that Dr. Maier was never identified as an expert witness in the FRCP 26(a)(2) disclosure or Defendants’ witness list, such an opinion is both unsupported by the record and lacks scientific foundation. Any putative claim that a male dog’s intact/neutered status is predictive of viciousness would require knowledge of veterinary medicine and ethology not possessed by the average lay person. Accordingly, neither Dr. Maier nor any other witness should be permitted to make such an argument.

8. **The Court should bar Maddox’s presence in the courtroom.**

Maddox should not be permitted to appear in the courtroom for any reason for he is neither a comfort dog for a vulnerable witness (see *State v. Dye*, 178 Wn.2d 541 (2013)), nor a service dog for a disabled witness or party. The risk of unduly prejudicing the jury by garnering sympathy for a dog appearing in the flesh, after additional training and bonding with Defendant Lamens, and whose demeanor may be observed and improperly extrapolated by the jury to ascertain how he might have acted nearly *four years ago*, is tremendous.

9. **The Court should exclude any evidence or reference to settlement offers, demands, negotiations, or discussions.**

ER 408 specifically prohibits any mention of settlement offers or proposals in order to prove the validity or invalidity of a claim. The reference to settlement negotiations can result in an order granting a new trial after a plaintiffs’ verdict in a

personal injury action and upholding the order on appeal. *Discargar v. Seattle*, 30 Wn.2d 461, 468 (1948); see also RCW 4.96.020(3)(f)(no reference to amount of damages stated in claim form). All such references should be excluded.

10. The Court should exclude any evidence or reference to Mr. Karp's practice.

ER 401-ER 403 govern presentation of "relevant" evidence. Mr. Karp's practice, though dedicated solely to animal law, including animal welfare and animal rights, makes no "fact that is of consequence to the determination of the action more probable or less probable than it would be without the evidence." ER 401. Even if relevant, referencing Mr. Karp's practice, personal values, or his website (www.animal-lawyer.com) would interject unfair prejudice, confuse the issues, and mislead the jury. ER 403.³

11. There should be no mention that this motion has been filed and argued before the court.

It is respectfully requested that this Court admonish the defendants and counsel not to mention that Mr. Criscuolo has brought these motions *in limine* prior to the beginning of trial. Defendants' counsel should be reminded that if any prejudicial comments, arguments or evidence are made before the jury, the Court will instruct the jury to disregard the same and consider these motions *in limine* as a continuing motion for a mistrial and potential evidence in support of a motion for fees and costs.

12. Reservation of objections for time of trial.

Mr. Criscuolo reserves the right to object to specific testimony as it relates to specific witnesses and exhibits during trial.

³ This concern is legitimate. In other cases, different defense counsel have cited to Mr. Karp's website and attempt to paint him (albeit unsuccessfully) as a zealot in order to sway the court.

1 **III. CONCLUSION**

2
3 For the foregoing reasons, Mr. Criscuolo respectfully requests that this
4 Motion in Limine be granted.

5 Dated this Jan. 20, 2014.

6 ANIMAL LAW OFFICES

7 **/s/ Adam P. Karp**

8
9 Adam P. Karp, WSBA No. 28622
10 Attorney for Plaintiff

11 **CERTIFICATE OF SERVICE**

12
13 I HEREBY CERTIFY that on Jan. 20, 2014, caused a true and correct copy of the
14 foregoing to be served upon the following person(s) in the following manner:

15 [x] **Email/ECF**

16 Patrick Moberg
17 Jerry Moberg & Assoc., P.S.
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24 ANIMAL LAW OFFICES

25 **/s/ Adam P. Karp**

Adam P. Karp, WSBA No. 28622
Attorney for Plaintiffs



BERTHA P. CARDELLE, Appellant, v. MIAMI-DADE COUNTY CODE ENFORCEMENT, Appellee

Case No. 09-206 AP

STATE OF FLORIDA
CIRCUIT COURT FOR THE ELEVENTH JUDICIAL CIRCUIT (APPELLATE), MIAMI-DADE
COUNTY

2010 Fla. ENV LEXIS 111; 2010 ER FALR 175; 17 Fla. L. Weekly Supp. 923a

March 30, 2010

CORE TERMS: hearing officer, dog, pit bull, animal, due process, identification, inspection, harmful, conform, freely, bull, pit, administrative decision, abuse of discretion, reversible error, harmful error, future harm, certificate, scientific, training, qualify, unfair, bias, goes, prosecutorial misconduct, expert testimony, medical examiner, expert witness, finder of fact, police officer

[*1]

Renato Perez and Natasha Perez, Law Offices of Perez & Perez, for Appellant.

R.A. Cuevas, Jr., County Attorney, and Andrew Boese, Assistant County Attorney, Office of the Miami-Dade County Attorney, for Appellee.

PANEL: Before KREEGER, PLATZER and BERNSTEIN, JJ. KREEGER, J., concurs. BERNSTEIN, J., dissents, with opinion.

DECISION-BY: PLATZER

DECISION:

An appeal from a decision rendered by Miami-Dade County Code Enforcement, Intergovernmental Services, Alfredo Bared, Hearing Officer.

Corrected Opinion on Scrivener's error

Appellant, Bertha P. Cardelle ("Cardelle"), appeals the administrative decision of a Miami-Dade County Code Enforcement hearing officer finding that her dog, "Kitty," exhibited unique characteristics that substantially conformed to the "**pit bull dog**" standards described in MIAMI DADE COUNTY, FLA., CODE § 5-17.1(a) (2010).

Miami-Dade County Code Enforcement put on a single witness, Officer Fernando Casadevall, an animal control officer. Robert Marin, a citation supervisor, acted as counsel, conducted the direct examination of Officer Casadevall, and made arguments on behalf of Miami-Dade County. Officer Casadevall testified that he worked for 15 years with the county and that 7 of those years **[*2]** were spent handling "**Pit Bull** call complaints and also cruelty complaints." Supervisor Marin submitted to the hearing officer certificates to show Officer Casadevall's expertise in "**pit bull dog**" identification, as follows: (1) certification as an animal control specialist, on February 11, 1994; (2) certification as an animal control specialist, on January 13, 2006; (3) 16 hours of training in the Euthanasia of Animals; (4) 16 hours of training in the Chemical Immobilization of Animals; (5) 4 hour course on **Pit Bull** Fighting; and (6) a certificate of participation in a Horse Cruelty and Neglect workshop.

Neither in his testimony nor through the certificates did Officer Casadevall or Miami Dade County specifically provide information to show how this witness was an expert in "**pit bull** dog" identification.

Officer Casadevall testified that he went to Cardelle's home in response to a complaint, where an employee of Cardelle's allowed him entry into the home to make the animal inspection. Upon entering, Officer Casadevall did not measure nor stand closer than "two-and-a-half feet" from the dog. After viewing the dog, he went back to his truck to look at the standards, then filled out **[*3]** a checklist form. He further testified that out of 47 characteristics on the "**pit bull** dog" breed evaluation form, the dog exhibited 37 characteristics. The dog did not conform to 10 characteristics. The hearing officer asked Officer Casadevall what the minimum characteristics were and Officer Casadevall testified that "according to the code" if the animal is "51 percent and over" that the animal is illegal. Counsel for Cardelle objected that this testimony was a misstatement of the law; that the code does not refer to numbers or percentages. The code requires that the animal exhibit distinguishing characteristics that "substantially conform" to standards set forth by the American Kennel Club or United Kennel Club.

Cardelle testified as the dog's owner. She also submitted photographs, veterinary records, and the affidavits of two veterinarians, Tess Theresia Wenzl, DVM ("Dr. Wenzl") and Manuel V. Morales, DVM ("Dr. Morales"). Both Dr. Wenzl and Dr. Morales attested that they did not identify the dog as a "**Pit-Bull**," that the dog did not conform to the standards established by the Club for American Staffordshire Terriers, Bull Terrier Breed, or Staffordshire Bull Terriers, and that **[*4]** the dog did not conform to the standards established by the United Kennel Club for American **Pit Bull** Terriers.

Cardelle submitted a letter from a third veterinarian, Michael J. Williams, DVM ("Dr. Williams"). Dr. Williams opined in the letter that the dog was friendly and not aggressive or dangerous. The hearing officer inquired why Dr. Williams had not completed an affidavit and Cardelle's counsel replied that Dr. Williams, while familiar with the dog, was unwilling to come forth as an affiant.

The hearing officer ultimately ruled in favor of Miami-Dade County Code Enforcement, finding that Cardelle's dog was a "**pit bull** dog" as defined in the code. This appeal followed.

A circuit court reviewing whether an administrative decision has been properly rendered, should examine: (1) whether procedural due process is accorded; (2) whether the essential requirements of law have been observed; and (3) whether the administrative findings and judgment are supported by competent substantial evidence. *Haines City Cmty. Dev. v. Heggs*, 658 So.2d 523 (Fla. 1995). A quasi-judicial decision based upon the record is not conclusive if minimal standards of due process are denied. *Jennings v. Dade* **[*5]** County, 589 So.2d 1337, 1340 (Fla. 3d DCA 1991). The issue of whether procedural due process was afforded in the instant case is dispositive. Thus, we need not address the other two prongs of the test in *Heggs*.

The appropriate test for an alleged violation of one's due process right to a fair hearing before an administrative agency is the harmless error test generally applied in civil cases. *Chrysler v. Department of Professional Regulation*, 627 So.2d 31 (Fla. 1st DCA 1993). In the instant case, we find that the hearing officer made numerous harmful legal errors throughout the hearing, which undermines our confidence in the result. While an administrative decision maker need not adhere to strict rules of evidence and procedure of a court of record, we find that the standard of basic fairness must be observed to satisfy requirements of due process of law. *Hadley v. Department of Admin.*, 411 So.2d 184 (Fla.

1982); City of Miami v. Jervis, 139 So.2d 513 (Fla. 3d DCA 1962).

The first violation of due process concerns the hearing officer's erroneous qualification of Officer Casadevall as an expert in "**pit bull dog**" identification. "[A]cceptance or rejection of expert [***6**] testimony is a matter within the sound discretion of the lower tribunal, and such decision will not be overturned on appeal absent a showing of abuse of discretion." Gray v. Russell Corp., 681 So.2d 310, 316 (Fla. 1st DCA 1996). The U.S. Supreme Court in Daubert v. Merrell Dow Pharm., 509 U.S. 579, 594 (1993), set forth a series of criteria against which to measure scientific or technical methods and principles, which include: testing; peer review and publication; potential error rates; standards of operation; and general acceptance in the relevant community. Officer Casadevall offered nothing about the process of measuring the data for error rates, because no such statistics are kept; no objective standards for comparison exist. This Court finds that the County applies a subjective criteria and there is little or no peer review.

The hearing officer erroneously concluded, "This is a with 15 years and all of this background, so I would qualify as an expert witness." However, the following questions answers occurred previously on cross examination:

BY MR. PEREZ:

Q You stated how many inspections you have done, over a 1,000 you said?

A Roughly a thousand. I have been working [***7**] 15 years with Miami-Dade Animal Control. It's very hard for me to say over the years. I would imagine that.

Q Let me finish my question. How many of those roughly do you come back and say it's not a **Pit Bull** or most of them **Pit Bulls**?

A It goes either way. You understand. You just got to do the **Pit Bull** evaluation. In the past I have -- its very hard to give you a number because --

Q Not a number, roughly. The majority of them turn out to be **Pit Bulls** in your mind?

A We don't keep records of that. I'm afraid to answer something that I don't know the numbers on it.

Therefore, Officer Casadevall freely admitted that he merely performs the inspections and does nothing to gather data, perform quality control and validate existing data. He offered nothing in the way of error checking and peer reviews of his work. Officer Casadevall may very well be an expert on following animal control procedure, but he freely admits that verifying "**pit bull dog**" identifications are outside of his realm of specialty. See Gensler v. State, 868 So.2d 557 (Fla. 3d DCA 2004) (finding error to allow chief medical examiner to form an expert opinion on defendant's rate of speed based on [***8**] victim injuries, where medical examiner freely admitted that was outside of his realm of specialty).

This Court notes that it has always been the rule that an expert opinion is inadmissible where it is apparent that the opinion is based on insufficient data. See Martin v. Story, 97 So.2d 343 (Fla. 2d DCA 1957) (opinion of public safety department expert that towed car was a dangerous instrumentality inadmissible where basis for opinion was admittedly incomplete statistics). Here Officer Casadevall was offered as an expert in identifying **pit bulls**, yet he offered insufficient data when cross examined by Cardelle's counsel. As he freely admits that there are no procedures in place to verify his findings and validate his

previous opinions as to whether he correctly identified **pit bulls**, the mere quantity of his inspections does not render his opinion reliable. See *A.A. v. State*, 461 So.2d 165 (Fla. 3d DCA 1984) (finding that trial court did not abuse discretion in allowing officer to testify where his identifications of substances as marijuana had always been corroborated by lab tests). Cardelle established prima facie evidence that Officer Casadevall did not have a sufficient **[*9]** basis for the opinion -- the opinions and inferences of the expert should not have been admitted unless Miami Dade County first established the underlying facts or data. 90.705(2), Fla. Stat. (2009); *Martin*, 97 So.2d at 347. Thus, we hold that the hearing officer abused his discretion by permitting Officer Casadevall to provide expert testimony.

This error is not harmless because the record reflects that the hearing officer placed greater weight on the testimony of Officer Casadevall specifically because he deemed him an expert on "**pit bull dog**" identification. The danger of attaching expert significance to lay testimony, particularly by using terms like "test," "pass," "fail," or "points," is that such terms give layperson observations an aura of scientific validity that results in unfair prejudice and ultimately harmful error. See *State v. Meador*, 674 So.2d 826 (Fla. 4th DCA 1996) (finding that DUI officers testifying whether a defendant's performance on roadside exercises conform to NHTSA standards are only allowed to provide lay testimony on their observations not scientific or expert opinion testimony).

Even in light of the *Meador* decision, the hearing officer referred **[*10]** to such exercises as "standard tests" showing unfair prejudice. This occurred when Cardelle argued as to the subjective nature of the findings when analogizing "**pit bull dog**" inspections to DUI field sobriety exercises. The hearing officer stated on the record, "No, it's the training of a police officer that have probably seen a lot of people under the influence of alcohol and this is why they have standard tests ... All of these are just standard tests." The hearing officer further stated, "I think there is a lot of weight on his testimony, meaning when he sees a **Pit Bull** or mixed **Pit Bull** he knows what he is looking at." Subsequent to making the above statements, the hearing officer incorrectly indicated, "And I have got two experts." The record shows that the hearing officer erroneously emphasized and relied on the alleged expert qualification of Officer Casadevall, resulting in harmful error to Cardelle.

A second due process violation occurred when the hearing officer, as a finder of fact, demonstrated extreme bias in favor of the testimony provided by Officer Casadevall, which was based on the fact that he is an animal control officer. See *Henry v. State*, 756 So.2d 170, 172 **[*11]** (Fla. 4th DCA 2000) (finding that juror was properly stricken for cause because there was a reasonable doubt that he could be impartial when he demonstrated a preconceived belief that officers are credible). We find that the hearing officer expressed this bias, when he stated that, "I have got the word of the officer, I have his word which carries certain weight." When Cardelle analogized the testimony of an animal control officer doing a "**pit bull dog**" evaluation to a DUI officer conducting field sobriety exercises, the hearing officer gratuitously injected his own personal predilection into the proceedings, stating, "I have been a cop for 29 years."

Officer Casadevall was Miami-Dade County's only witness and the hearing officer's improper bolstering of his credibility based on the fact that he was an animal control officer did result in harmful error to Cardelle. We hold that Officer Casadevall's testimony constitutes the only evidence to establish whether the dog was a "**pit bull dog**" within the meaning of the code and that the bolstering was not harmless. See *Cisneros v. State*, 678 So.2d 888 (Fla. 4th DCA 1996) (finding it improper for the finder of fact to consider a witness's **[*12]** status as a police officer in making a credibility determination thus resulting in harmful reversible error where the case relied on the officer's testimony).

The final violation of due process occurred when the hearing officer made numerous comments on the record indicating that he was inclined to find the dog was a "**pit bull** dog" based on his fear that the dog would eventually hurt someone. The hearing officer clearly expressed this fear when he stated: "Maybe, God forbid, something happens in that house where that dog turns crazy or bites someone or kills someone or maims someone, then you can live with it." We hold that these comments indicated that the hearing officer relied on an impermissible factor -- fear of future harm. See *Williams v. State*, 68 So.2d 583 (Fla. 1953) (finding that prosecutor's argument that a not guilty verdict would allow an accused to go free and murder others was harmful reversible error). Such reliance results in the fact finder, in this case the hearing officer, being biased and unfair. See *Adams v. State*, 192 So.2d 762 (Fla. 1966) (finding that asking jurors to put their wives and daughters in the shoes of a rape victim, was an impermissible [*13] appeal to fear and resulted in harmful reversible error). The law prohibits any argument that would "inflame the minds and passions" of a fact finder and does this to avoid a "verdict [that] reflects an emotional response." *King v. State*, 623 So.2d 486, 488 (Fla. 1993).

We hold based on the totality of the harmful errors committed by the hearing officer, the proceeding was neither fair nor impartial and failed to accord due process. See *Jervis*, 139 So.2d at 517 ("It is apparent from the record that the administrative proceedings did not meet with the minimum requirements guaranteed by law to those persons appearing before an administrative tribunal.")

FOR THESE REASONS, the finding of the hearing officer deciding in favor of Appellee is REVERSED and this cause is REMANDED for a new hearing that comports with the law and accords due process.

REVERSED AND REMANDED.

BERNSTEIN, J. dissenting.

I respectfully dissent. No matter how well-intentioned, this Court may not re-weigh the evidence or substitute its judgment for the hearing officer below. *Haines City Community Development v. Heggs*, 658 So.2d 523, 530 (Fla. 1995) (citing *Educational Development Center v. City of West Palm Beach*, 541 So.2d 106 (Fla. 1989)). Where the facts give the hearing officer a choice between two alternatives, it is up to the hearing officer to make that choice, not the Circuit Court Appellate Division. See, *Metropolitan Dade County v. Blumenthal*, 675 So.2d 598, 605 (Fla. 3d DCA 1995).

The hearing officer here found that Kitty was a prohibited **pit bull**. The majority identifies three alleged "due process" violations to justify reversing this finding. None of these arguments is persuasive, in my opinion.

The first alleged due process violation argues that the hearing officer should not have qualified the County's Animal Control Officer as an expert witness. The majority even goes so far as to find it was an abuse of discretion to qualify this expert. Yet this witness has been an Animal Control Officer for 15 years, he has conducted over a thousand inspections, he spent the last 7 years investigating **pit bull** complaints, and he was himself a breeder of **pit bulls** in the past. To say that it was an "abuse of discretion" to qualify this man as an expert to identify **pit bulls** strains credibility. And any concerns about the manner in which he conducted his investigation [*15] certainly goes to the weight, not the admissibility, of his testimony.

The second alleged due process violation argues that the hearing officer demonstrated bias

when he favored testimony of one witness over another. The majority does not explain how any hearing officer (or any Judge, for that matter) ever chooses among competing witness testimony without "favoring" one side. In any event, this Court, sitting in its appellate capacity, is specifically forbidden to re-weigh the evidence presented below. *Metropolitan Dade County v. Blumenthal*, 675 So.2d 598, 605 (Fla. 3d DCA 1995).

The third alleged due process violation argues that the hearing officer made prejudicial comments on the record about the fear of future harm. The majority cites cases of prosecutorial misconduct to bolster its argument. Yet these decisions simply do not apply to this appeal. I agree that it can cause prejudice when a prosecutor frightens a jury about a criminal defendant's propensity for future harm. Yet this appeal is not from a criminal proceeding, and it does not involve prosecutorial misconduct. No one "prejudiced" this hearing officer, or urged him to act by use of a frightening or improper **[*16]** argument. Rather, the hearing officer himself made a statement on the record, attempting to explain his ruling. While loquacious hearing officers might be well advised not to make unnecessary comments when they rule, there was no "due process" violation here.

What has happened in this case is the majority simply disagrees with the ruling of the hearing officer and chooses a different result. This is evident from the fact that the three alleged due process grounds on which the majority relies were never argued by any party below. Since the appellant failed to substantiate any legal basis for reversal, I would affirm the hearing officer's finding that Kitty is a prohibited **pit bull**.

B

UNITED STATES DISTRICT COURT
EASTERN DISTRICT OF WASHINGTON

NICHOLAS CRISCUOLO, individually;
and TAXPAYERS OF THE CITY OF
MOSES LAKE ex rel. NICHOLAS
CRISCUOLO;

Plaintiff,

vs.

GRANT COUNTY, et al.,

Defendants.

Case No.: CV-10-470-LRS

PLAINTIFF'S FRCP 26(A)(2)
DISCLOSURE:

Report of Dr. Victoria L. Voith

FRCP 26(a)(2)(B)(i): Complete Statement of All Opinions

1. I have been asked to give an expert opinion concerning (1) whether animal control officer, police officer, veterinary school, or dog obedience training produces individuals competent to accurately visually identify dog breeds in mixed breed dogs; (2) whether dog bite statistics that appear to target particular breeds are based on accurate breed identifications; (3) whether the methodology (or lack thereof) utilized by the City of Moses Lake in enforcing MLMC 6.06.010(A)(3) is arbitrary, capricious, unreasoning, and not based on sound scientific principles; and related issues.

2. In addition to the documents reviewed as stated below, I depend on the professional literature in the sciences of genomics, genetics, animal behavior, veterinary medicine, and public health. I also draw upon my higher level academic education – D.V.M., M.A., M.Sc., and Ph.D., which proved a background to evaluate and analyze data and solve problems.

- A community approach to dog bite prevention. AVMA task Force on Canine Aggression and Human-Canine Interactions. *J Am Vet Med Assoc.* **218** (11) : 1732-1749 (2001)

VOITH REPORT - 1

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- Wright JC. Canine Aggression toward people: bite scenarios and prevention. *Vet Clin North Am Small Anim Pract.* **21**, 1991:299-314.
- Schneider R and Vaida ML. Survey of canine and feline populations: Alameda and Contra Costa Counties, California 1970. *J Am Vet Med Assoc.* **166**: 481-486 (1975)
- Pinckney LE and Kennedy LA. Traumatic Deaths from Dog Attacks in the United States. *PEDIATRICS.* **69** (2) 1982. 193-196.
- Winkler WG. Human Deaths Induced by Dog Bites, United States, 1974-75. *Public Health Reports* **92**(5): 425-429 (1977).
- Scott JP and Fuller JL. *Genetics and the Social Behavior of the Dog: The classic study.* 1965. The University of Chicago Press, Chicago.
- G.J. Patronek, M. Slater, A. Marder. Use of a number-needed-to-ban calculation to illustrate limitations of breed-specific legislation in decreasing the risk of dog bite-related injury, *J.Am.Vet.Med.Assoc.* **237**,788-792 (2010).
- Parker et al . Genetic Structure of the Purebred Domestic Dog. *SCIENCE* **304**: 1160-1164 (2004).
- Jones P et al. Single-Nucleotide-Polymorphism-Based Association Mapping of Dog Stereotypes. *Genetics* **179**: 1033-1044 (2008).
- Voith VL et al. Comparison of Adoption Agency Breed Identification and DNA Breed identification of Dogs. *JAAWS*.**12**:253-252, 2009.
- Voith VL. The Impact of Companion Animal Problems on Society and the Role of Veterinarians. *Vet Clin Small Anim* **39**:327-345. 2009.

It is this body of peer-reviewed articles, research, my education and experience that informs my professional opinions. I also list published abstracts of papers presented at several recent meetings where I delivered presentations pertaining to dangerous dogs and/or dog breed identification. I attach a copy of a Poster Presentation displayed at the American College of Veterinary Behaviorist/American Veterinary Society of Animal Behavior Veterinary Symposium in conjunction with the national AVMA convention on July 30, 2010, in Atlanta, Ga. (where it was awarded 1st place for poster presentations) and displayed at the Evidence-Based Veterinary Medicine Symposium, June 14-15, 2010 at Western University of Health Sciences.

- Voith, V.L. Serious Dog Attacks: a detailed analysis. 2003 AVMA Convention Notes, 2003.

VOITH REPORT - 2

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- 1 • Voith, V . L. Comparison of Visual and DNA Identification of Dogs. 2009 AVMA Annual Convention Notes. July 12, 2009, Seattle, WA.
- 2 • Voith V L. Interactive Dog Breed Presentation. Association of Pet Dog Trainers Annual Meeting, Oct 25, 2009 Oakland, CA.
- 3 • Marder A and Voith VL The American shelter dog: identification of dogs by personality, Proceedings of the 7th International Veterinary Behaviour Meeting p 23-26, Edinburgh
- 4 Scotland UK 28-31 Oct 2009.
- 5 • Victoria L Voith, Dog Breed Identification, *National Animal Control Association Summit, Annual Meeting*, May, 2010.
- 6 • Voith, V L. Improving Communications: Inter-rater reliability of dog breed identification and comparison to DNA analysis, *2010 AVMA Annual Convention Notes*, July 31, 2010, Atlanta, GA
- 7 • Voith V L, Bond C, Ingram E, Irizarry K, Mitsouras K, Marilo J. Comparison of Adoption Agency Identification and DNA Breed Identification of Dogs. Evidence Based Veterinary Medicine Symposium, Jun. 14-15, 2010, Pomona, Calif.
- 8 • Voith V L, Chadik C, Ingram E, Irizarry K, Mitsouras K, Marilo J. Dog Breed Identification, ACVB/AVSAB Symposium, July 30, 2010 Atlanta GA

9 My opinions are accepted by well-read, academically trained experts in the fields of veterinary
10 animal behavior, applied animal behavior, and epidemiology. I am not aware of any dispute,
11 much less a significant one, by qualified experts in these scientific communities concerning the
12 theories and methodologies employed by me in drawing these conclusions.

13
14
15 3. With a level of confidence of reasonable scientific certainty and beyond evidentiary
16 preponderance, and based on my training, professional literature, and experience, generally
17 accepted methodologies and reasoning, I reach the following expert conclusions:

18 (1) Known crosses of purebred dogs (i.e., mixed breed dogs) may not look like either
19 parent and may, in fact, more closely resemble other breeds.

20
21 (2) There is little correlation between DNA identification of breeds that comprise mixed
22 breed dogs and visual identification by professionals familiar with dogs, including animal control
23 and veterinary medical personnel. DNA identification is reasonably relied upon by experts in my
24 fields of expertise in forming opinions and inferences upon the subjects described herein and

25 **VOITH REPORT - 3**

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1 more accurate than visual. Visual identifications by people assumed to have special knowledge
2 in breed identification of mixed breed dogs (e.g., animal control and veterinary medical
3 personnel) is less than 50% accurate – worse than chance. Thus, visual identification of the breed
4 composition of mixed breed dogs is frequently inaccurate.

5 (3) There is a low level of agreement among professionals (familiar with dogs, including
6 personnel in animal control and veterinary medicine) as to the most predominant breed (or any
7 breed) in a mixed breed dog. That is, they often disagree.

8 (4) Even if some professionals (familiar with dogs, including personnel in animal control
9 and veterinary medicine) agree as to the breed composition of a mixed breed dog, the DNA
10 analysis of breed composition may not verify the agreed-upon visual identification.

11 (5) Lists of breeds who allegedly bite, attack or injure people, as contained in some of the
12 widely-quoted, peer-reviewed articles identified above, are not validated and are unreliable. The
13 majority of the lists were compiled from newspaper accounts that were not verified as to breed of
14 dog or who identified the dogs. Indeed, most of the authors warn, in the articles themselves, that
15 this information is derive from unverified, potentially inaccurate sources, and there was no
16 accurate data available regarding the population of dogs, much less the representation of specific
17 breeds. The articles themselves caution that the breeds listed in the articles cannot and should not
18 be used to infer any breed-specific risk, such as that taken by the City of Moses Lake in passing
19 Ch. 6.06 MLMC. These articles also usually emphasize that other factors contribute to the
20 aggressivity of dogs, such as their environment, individual histories, and circumstances in which
21 the dogs were aggressive. Furthermore, these lists were derived before the advent of DNA breed
22 identification and revelation of the large discrepancy between visual and DNA identification of
23
24
25

1 mixed breed dogs. In summary, reports that appear to target particular breeds as being more
 2 dangerous are not based on validated breed identifications or the known proportion of those
 3 breeds in the community.

4 (6) The use of the phrase “element ... as to be identifiable” as contained in MLMC
 5 6.06.010(A)(3) is ambiguous and unclear. If interpreted to mean a feature or anatomical
 6 characteristic, it cannot be concluded with any certainty that because a dog in question appears to
 7 have some or any feature that is similar to those in a purebred dog, that the dog in question is
 8 partially that breed of dog. If “element” is meant to be a portion of the dog’s genetic breed
 9 make-up, this cannot be validly or reliably visually determined. Even whether or not a dog is a
 10 purebred can be difficult to determine visually. The deposition testimonies of Dean Mitchell and
 11 Santiago Reyna illustrate these points.
 12

13 (7) The “methodology” used by the City of Moses Lake to declare dogs hazardous based
 14 on if a dog appears to be a specific breed or partially a specific breed is subjective, variable by
 15 different observers, is not based on solid evidence or sound scientific principles, and lacks
 16 rational basis.
 17

18 **FRCP 26(a)(2)(B)(ii): Facts or Data Considered in Forming Opinions**

19 4. I have also reviewed the following materials in arriving at my opinion: *Deposition of*
 20 *Dean Mitchell, Deposition of Santiago Reyna, Answers and Responses to Plaintiff’s First*
 21 *Discovery Requests to the City of Moses Lake*, public records responses from the City of Moses
 22 Lake, *Chapter 6.06 HAZARDOUS DOGS* of the City of Moses Lake Municipal Code, *Deputy*
 23 *Report for Incident 10GS00928* by Deputy B. Lamens GT-12, genetic breed profiles reported as
 24 to specific dogs tested by Mars Veterinary TM [maker of the Wisdom Panel® Professional Canine
 25

VOITH REPORT - 5

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Genetic Analysis]

FRCP 26(a)(2)(B)(iii): Exhibits Used to Summarize or Support Opinions

5. Exhibits used to summarize and support my opinions include exhibits to the Mitchell and Reyna depositions, as well as the attached poster.

FRCP 26(a)(2)(B)(iv): Expert Qualifications – List of Publications

6. The attached curriculum vitae provides my qualifications and list of publications authored by me in the past ten years.

FRCP 26(a)(2)(B)(v): Prior Testimony

7. In the past four years, I have not testified as an expert at trial or by deposition in any cases.

FRCP 26(a)(2)(B)(vi): Compensation

8. I am charging \$1000.00 to the Plaintiff for my study and written testimony in the case. I am charging \$300 an hour to obtain documents responsive to written discovery served upon Plaintiff. If I am deposed or appear in court, I will charge a \$1000.00 per partial or full day of participation, plus costs of travel, room, and board.

9. I reserve the right to amend and change my declaration and expert opinions as I review further evidence presented in this case, including but not limited to depositions and live testimony and FRCP 26(a)(2) disclosures by the Defendant.

Executed this August 17, 2011 in the city of Pomona, California.



VICTORIA L. VOITH, DVM, Ph.D., DACVB

VOITH REPORT - 6

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COMPARISON OF ADOPTION AGENCY BREED IDENTIFICATION AND DNA BREED IDENTIFICATION OF DOGS

This study was undertaken to compare breed identification by canine adoption agencies with identification by DNA analysis of 20 dogs of unknown parentage

BACKGROUND

Breed Specific Regulations:

- Government legislation, housing associations, landlords, and insurance companies may either prohibit ownership or impose constraints on ownership of specific breeds or mixed breeds
- Restrictions may ban ownership, require owners to move or relinquish their dogs, require dogs to be muzzled or confined in a specific manner, and may even result in confiscation and/or euthanasia
- Restrictions are typically worded as “any purebred X (name of breed) or dog that has any characteristics of breed X”
- Identity of the dog might be assigned by a variety of people
- If people are unsure what breed a dog is, they are often forced to guess and asked to name “the breed the dog looks most like”

Shelter Dogs:

- The majority are mixed breeds of unknown parentage
- It is common practice for staff to assign breed based on appearance
- Breed identity elicits behavioral expectations and affects ease of adoption

MATERIALS AND METHODS

Subjects:

- 40 dogs met the entrance criteria of having been adopted, being available on specific dates for photographs and blood samples, and having fully erupted canine teeth
- These dogs were placed in 4 weight categories and 5 were randomly selected from each category:
 - < 20 pounds, 21-40 pounds, 41-60 pounds, and > 60 pounds
- 20 dogs entered the study:
 - 12 Spayed Females; 1 Intact Female; 7 Castrated Males
 - 5.5 months to 12 years old
- The dogs had been acquired between 2.5 months and 11.5 years prior to the study
- The dogs had been adopted from 17 different locations (shelters, rescue groups, foster housing, animal control and similar agencies)

DNA Analysis:

- MARS VETERINARY™, Lincoln, Nebraska, performed the DNA analyses and reported to have “an average accuracy of 84% in first-generation crossbred dogs of known parentage”
- All of the breeds identified by the adoption agencies were in the MARS database
- Breeds must comprise at least 12.5% of the dog’s make-up to be reported

Poster Presentation: ACVB/AVSAB Veterinary Symposium; July 30, 2010 Atlanta, Georgia

DOG BREED IDENTIFICATION

V Voith, C Chadik, E Ingram, K Irizarry, K Mitsouras, J Marilo
Western University of Health Sciences Pomona, California



Adopted as: “Terrier”/Chow Chow mix at 7.5 months old
DNA: 25% each: American Staffordshire Terrier, Saint Bernard
12.5% Shet-Pei



Adopted as: Cocker Spaniel mix at 3 years old
DNA: 25% each: Retriever, American Eskimo Dog, Golden Retriever, Nova Scotia Duck-Tolling Retriever



Adopted as: Border Collie mix at 7 weeks old
DNA: 25% each: English Springer Spaniel, German Wirehaired Pointer



Adopted as: “Shepherd” mix at 11 weeks old
DNA: 25% Lhasa Apso
12.5% each: Bichon Frise, Australian Cattle Dog, Italian Greyhound, Pekingese, Shih-Tzu



Adopted as: German Shepherd/Labrador mix at 1 year old
DNA: 12.5% each: German Shepherd, Australian Shepherd, Siberian Husky, Chow Chow, Dalmatian



Adopted as: Labrador mix at 2 years old
DNA: 12.5% each: Chow Chow, Dachshund, Nova Scotia Duck-Tolling Retriever



Adopted as: Corgi mix at 3 months old
DNA: 12.5% each: Pomeranian, Tibetan Terrier, Shih Tzu, Black Russian Terrier, American Water Spaniel



Adopted as: German Short-haired Pointer mix at 5 months old
DNA: 25% each: French Bull Dog, Chow Chow; 12.5% each: Great Dane, Gordon Setter, Dalmatian, Chumbei Spaniel



Adopted as: “Terrier” mix at 3 months old
DNA: 25% Dalmatian;
12.5% each: Boxer, Chow Chow, Newfoundland



Adopted as: Silky Terrier mix at 3.5 years old
DNA: 25% each: Pekingese, Australian Shepherd



Adopted as: Chow Chow mix at 6 weeks old
DNA: 25% each: German Shepherd Dog, American Staffordshire Terrier
12.5% each: Chow Chow, Bull Terrier



Adopted as: “Shepherd” mix at 1 year old
DNA: 12.5% each: Boxer, Dalmatian, Dachshund, Glen of Innes Terrier, Australian Shepherd Dog



Adopted as: Australian Shepherd Dog mix at 4 months old
DNA: 12.5% Alaskan Malamute



Adopted as: Australian Shepherd Dog mix at 3 months old
DNA: 25% each: Standard Schnauzer, German Shepherd Dog;
12.5% English Setter



Adopted as: Labrador mix at 5 years old
DNA: 12.5% each: St. Bernard, Gordon Setter, Chow Chow, Golden Retriever



Adopted as: Australian Shepherd Dog/Labrador mix at 3 months old
DNA: 12.5% each: Australian Shepherd Dog, Boxer, Golden Retriever



Adopted as: King Charles Spaniel mix at 1 year old
DNA: 12.5% each: Cavalier King Charles Spaniel, Chihuahua, Shih Tzu



Adopted as: Miniature Pinscher/Poodle mix at 3 months old
DNA: 50% Miniature Pinscher;
12.5% Dachshund



Adopted as: “Terrier” mix at 6 months old
DNA: 25% Border Collie;
12.5% each: Cocker Spaniel, Bassett Hound



Adopted as: Tibetan Terrier mix at 5 years old
DNA: 25% Shih Tzu;
12.5% each: Pekingese, Cocker Spaniel, Miniature Schnauzer

RESULTS

See Poster Photographs and Legends. The grid behind the dogs depicts 1 foot squares.

Adopting agencies identifications

- All dogs had been identified as mixed breeds at time of adoption
- 16 dogs had been described as a specific breed mix
- 4 dogs were only identified by a “type” (2 “shepherd” mixes and 2 “terrier” mixes)
- 1 dog had been identified by both a specific breed (Chow Chow) and a “type” (terrier)

DNA and Adoption Agency Comparison

- Only 25% (4/16) of the dogs identified by agencies as specified breed mixes were also identified as the same predominant breeds by DNA (3 were only 12.5% of the dogs’ composition)
- No German Shepherd Dog ancestry was reported by DNA in the 2 dogs identified only as “shepherd mixes” by adoption agencies
- In the 3 dogs described as terrier mixes, a terrier breed was only identified by DNA in one dog
- In 15 of the 16 dogs, DNA analyses identified breeds as predominant that were not proposed by the adoption agencies

DISCUSSION

- Looking at the photographs, it is apparent that many mixed breed dogs do not closely, if at all, resemble the predominant breeds identified by DNA
- Mixed breed dogs may not look like their parents or grandparents
- These results do not allow a conclusion that shelter personnel cannot identify purebred dogs
- Breed identities at adoption agencies can be assigned by owners relinquishing their dogs, by anyone working or volunteering at a facility, or be based on what a puppy’s mother looks like

CONCLUSIONS

- There is little correlation between dog adoption agencies’ identification of probable breed composition with the identification of breeds by DNA analysis
- Further evaluation of the reliability and validity of visual dog breed identification is warranted
- Justification of current public and private policies pertaining to breed specific regulations should be reviewed

REFERENCES

- Voith VL, Ingram E, Mitsouras K, Irizarry K. (2009). Comparison of Adoption Agency Breed Identification and DNA Breed Identification of Dogs. Journal of Applied Animal Welfare Science, 12, 253-262.

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Feb 2011

CURRENT PROFESSIONAL ACTIVITY:

Professor, College of Veterinary Medicine, Western University of Health Sciences
Content expert: Animal Behavior
Problem Based Learning Facilitator
Director Animal Behavior Wellness Clinic at Western University of Health Sciences
(Oct. 2006 - Present)

LICENSURE: Veterinary Medical
Michigan: Veterinary License
California: Veterinary Medical License

CERTIFICATION

Charter Diplomate: American College of Veterinary Behaviorists: American Veterinary
Medical Association
Certified Applied Animal Behaviorist: The Animal Behavior Society

EDUCATION: EDUCATION:

1962 - 1964: College of Agriculture, The Ohio State University
Area of Study: Animal Science

DVM 1968: College of Veterinary Medicine, The Ohio State University

MSc 1970: Veterinary Clinical Sciences, The Ohio State University
Area of Studies: Ethology, Clinical Pathology, Endocrinology
Thesis: Development of Ectopic Thyroids in the Dog

MA 1975: Department of Psychology
Area of Study: Experimental and Comparative psychology
Thesis: Pattern Discrimination, Learning Set
Formation, Memory Retention, Spatial and Visual Reversal Learning by the Horse

1975 - 1977: University of California at Davis
PhD 1982: Area of studies: Neuroanatomy/Animal Behavior
Dissertation: Role of Medial Preoptic-Anterior Hypothalamus in Maternal and Sexual
Behavior in the Female Cat

POSTGRADUATE TRAINING:

1968 Post-doctoral Fellow of the Morris Animal Foundation in Veterinary Clinical Pathology, The Ohio State University
Research project: Serum Thyroid Binding Proteins and Their Relationship to Thyroid Function in the Dog

1979 - 1981 Post-doctoral Fellow at the School of Medicine, University of Pennsylvania;
Area of study: Human-Animal Bond

1980 June Institute in Behavior Therapy, School of Medicine, Temple University, Philadelphia, Pa

HONORS:

Alpha Lambda Delta, Freshman Women's Honorary
The Ohio State University - 1963

Mirrors, Sophomore Women's Honorary
The Ohio State University - 1964

Phi Zeta, Veterinary Medical Honorary - 1968

Leo Bustad, Companion Animal Veterinarian of the Year - State of Pennsylvania - 1986

APPLIED ANIMAL BEHAVIOR ACTIVITIES:

1970 - Present: Applied Animal Behavior Consultant; Providing services to industry, government agencies, teaching institutions, state veterinary associations, and individual animal owners. Examples of applied animal behavior activities:

2005-2006 Pedigree Pet Foods Advisory Council

1996 - 2001 Investigator in clinical trials conducted in Dayton Ohio for major pharmaceutical companies

1998 -2001 Consultant re research projects for major pet food company regarding nutrition and behavior within Dept of Psychology, Wright State University, Dayton, Ohio

1998 - 2001 Affiliation with MED-VET, a veterinary specialty practice in Columbus and Dayton, Ohio, as a clinical veterinary behavior specialist

1998: Consultant to Covance Research Products Inc

1996: Special Consultant, National Association for Search and Rescue (affiliated with the Federal Emergency Management Agency), Chantilly, Va

1993 - 1996: Visiting Senior Research Scientist, Worldwide Animal Health, The Upjohn Company, Kalamazoo, Michigan

1985 - 1993: Consultant to the Invisible Fence Co. Inc. ,Berwyn, Pa

1989: Consultant to Hazelton Laboratories, Cumberland, Va

FACULTY APPOINTMENTS:

(appointments between 1968-1978 held concurrently while engaged in graduate studies)

1968 - 1971 Instructor, Department of Veterinary Clinical Sciences, The Ohio State University, Departments of Soft Tissue Surgery, Outpatient Clinics, Emergency Service

1972 Instructor, Columbus Technical Institute, Certified Veterinary Health Technician Program, Columbus, Ohio

1973 Visiting Instructor, Department of Veterinary Physiology and Pharmacology, The Ohio State University.
Designed and taught 3-hour Animal Behavior Course;
Outpatient animal behavior consultation at teaching hospital

1974 – 1975 Lecturer, Department of Animal Science, Horse production courses, The Ohio State University

1975 – 1978 Post-doctoral research assistant, University of California, Davis, California. Teaching, research, and animal behavior clinician at VMTH

1979 - 1994: Faculty Appointments (Instructor, Associate, Assistant Professor, Adjunct) at the University of Pennsylvania, School of Veterinary Medicine and Animal Behavior Clinic, Veterinary Hospital of the University of Pennsylvania, Philadelphia, Pa
Included teaching and research in animal behavior and development and management of VHUP Animal Behavior Clinic

1985 - 1995: Courtesy Assistant Professor, Department of Physiological Sciences, College of Veterinary Medicine, University of Florida. Teaching and advising related to veterinary animal behavior curriculum

1986 - 1994 Adjunct Faculty Appointment, Dept of Environmental Practice, School of Veterinary Medicine, Knoxville, Tenn

1999 – 2000: Visiting Professor, College of Veterinary Medicine, Nursing, and Allied Health, Tuskegee University, Tuskegee AL

1997 - 2001: Adjunct Professor, Dept of Psychology, Wright State University, Dayton, Ohio
Research and taught course re the Behavior of Companion Animals

2004- Present: Professor, College of Veterinary Medicine, Western University
Content expert: Animal Behavior (2004-present)
Problem Based Learning Facilitator (2004-present)
Co-director in Preclinical Courses of Clinical Skills , 1st and 2nd years (2004-2006)
Co-director in Veterinary Issues(2004-2005; 2006-2007)
Director of Third Year Course, Humane Society and Shelter Medicine (2005-2006)
Animal Behavior Wellness Clinic at Western University of Health Sciences (Oct. 2006 – present))
Faculty of Veterinary Medicine, University of Calgary, Instructor for Animal Behaviour Course VM 322. Oct 2008 - Dec 2008.

SCIENTIFIC AND PROFESSIONAL ORGANIZATIONS:

American Veterinary Medical Association

**The Animal Behavior Society
American Association of Human-Animal Bond Veterinarians
American College of Veterinary Behaviorists (ACVB); Charter Diplomate
International Society for Anthrozoology
California Veterinary Medical Association
Association of Shelter Veterinarians
Orange Belt Veterinary Medical Association**

PROFESSIONAL SERVICE:

**American Veterinary Medical Association
Human-Animal Bond Committee Member 1981-1990
Vice-Chairperson 1989-1990**

**American Veterinary Ethology Society
President Elect 1980-1982
President 1982-1984**

**American Veterinary Society of Animal Behavior
Newsletter Editor 1984-1986
Organizing Committee for ACVB 1987-1993
Member-at-Large 1992-1994
President-Elect 1998-1999;
President 2000-2001**

**Animal Behavior Society
Animal Care Committee Member 1985-1987
Board of Professional Certification 1992-1994
Committee on Applied Issues 1997-1998**

**American College of Veterinary Behaviorists (ACVB)
Organizing Committee 1987-1993
Certification Examination Committee 1994-1996
Member-at-Large 1994-1996
Credentials Committee 1999-2000**

**American Association of Human-Animal Bond Veterinarians
Member at Large, Board of Directors 2006
President Elect 2006-2007
President 2008-2009
Past President 2009-2010**

**California Veterinary Medical Association
Behavior Task Force 2007**

**Animal Rescue League of Boston
Advisory Committee: 2008 – Present**

**National Canine Research Council
January 2010 - Present**

EDITORIAL BOARDS:

Journal of Applied Animal Behaviour Science (1985-93)

Journal of American Animal Hospital Association (1985-1990)
Veterinary Therapeutics (2000-2001)
Veterinary Therapeutics (2005-2010)

PUBLIC SERVICES:

Chairperson of the Temperament Selection Committee of Delta Society, San Antonio Chapter (1989-92)

Advisory Board, Delta Society San Antonio Chapter (1989-1992)

Therapeutic Riding Institute, Dayton OH, (1998-2001)

Animal Shelter Advisory Board, Montgomery County Animal Shelter, Montgomery County Ohio (1999-2001)

Bernalillo County (New Mexico) Domestic Violence Collaborative, (2003-2004)

Helen Woodward Center, California
Behavior Consultant (2006)

OTHER PROFESSIONAL ACTIVITIES:

1971 Small Animal Practice: Willoughby Hills, Ohio. Dr Henley's Animal Hospital, Soft Tissue Surgery and Outpatient Medicine

1972 - 1973 Director, developer, and leader of East African Field Trips for International Field Studies, Inc. Capital University, Columbus, Ohio

1977 - 1978 Relief practitioner, periodically full or part-time: General small animal practice and emergency service in the state of California

1998 - 2001: Veterinary health checks at Montgomery County Animal Shelter, Dayton Ohio

October 2001 – July 2004: City Veterinarian, Dept of Environmental Health, Animal Services Division, City of Albuquerque, New Mexico

Masterfoods Pet Advisory Board 2005 – Present.

PUBLICATIONS:

Refereed Publications:

Tuber, D., Hothersall D. and Voith V. L. Animal Clinical Psychology: A Modest Proposal. Amer. Psychol., 29:762-766, 1974.

Hart, B. L. and Voith V. L. Changes in urine spraying, feeding and sleep behavior of cats following medial preoptic-anterior hypothalamic lesions. Brain Research, 145:406-409, 1978.

Borchelt, P. L., Lockwood R., Beck A. M., and Voith V. L. Attacks by Packs of Dogs involving Predation on Human Beings. Public Health Reports 98(1):57- 66, 1983.

Borchelt, P. L. and Voith, V. L. Elimination Behavior Problems in Cats. Compendium on Continuing Education, 3(8):730-738, 1981.

Voith, V. L. and Borchelt, P. L. Separation Anxiety in Dogs. Compendium on Continuing Education 7(1):42-52, 1985.

Voith, V. L. and Borchelt, P. L. Fears and Phobias in Companion Animals. Compendium on Continuing Education, 7(3):209-221, 1985.

Voith, V. L. and Borchelt, P. L. History Taking and Interviewing Technique. Compendium on Continuing Education, 7(5):432-435, 1985.

Voith, V. L. and Borchelt, P. L. Elimination Behavior and Related Problems in Dogs. Compendium on Continuing Education, 7(7):537-549, 1985.

Borchelt, P. L. and Voith V. L. Punishment. Compendium on Continuing Education, 7(9):780-788, 1985.

Borchelt, P. L. and Voith V. L. Aggressive Behavior in Dogs and Cats. Compendium on Continuing Education, 7(11):949-960, 1985.

Borchelt, P. L. and Voith V. L. Dominance Aggression in Dogs. Compendium on Continuing Education, 8(1):36-44, 1986.

Borchelt, P. L. and Voith, V. L. Elimination Behavior Problems in Cats. Compendium on Continuing Education, 8(3):1986.

Voith, V. L. and Borchelt, P. L. Social Behavior of Domestic Cats. Compendium on Continuing Education, 8(9):637-648, 1986.

Line S. and Voith V. L. Dominance Aggression of Dogs Towards People: Behavioral Profile and Response to Treatment. Applied Animal Behavioral Science, 16:77-83, 1986.

Chapman, B. L. and Voith, V. L. Cat Aggression Redirected to People 14 cases (1981-1987). JAVMA, 196:947-950, 1990.

Chapman, B. L. and Voith, V. L. Behavioral Problems in Old Dogs: 26 cases (1984-1987). JAVMA, 196:944-946, 1990.

Voith, V. L., Wright, J.C., and Danneman, P.J., Is There a Relationship Between Canine Behavior Problems and Spoiling Activities, Anthropomorphism and Obedience Training? Applied Animal Behavioural Science, 34:263-272, 1992.

Voith V.L. Interdog Aggression. Applied Animal Behaviour Science. 46:131, 1995.

Simpson, B.S. and Voith, V.L. Extralabel Drug Use in Veterinary Behavioral Medicine. Compendium on Continuing Education for the Practicing Veterinarian 10: 329-331, 1997

Hennessy M.B., Williams, M.T., Miller, D.D., Douglas, C.W., and Voith V.L. Influence of male and female petters on plasma cortisol and behavior: Can human interaction reduce the stress of dogs in a public animal shelter? Applied Animal Behavioural Science, 61: 63-77, 1998

Hennessy M.B., Voith V.L. , Mazzei, S.J. ,Buttram,J., Miller, D.D., and Linden, F. Behavior and cortisol levels of dogs in a public animal shelter and an exploration of the ability of these measures to predict problem behavior after adoption. Applied Animal Behavioural Science, 73, 217-233, 2001.

Hennessy M.B., Voith V.L. Hawke, J.L., Travis,L, Young, B.S., Centrone, J., McDowell, A.I., Linden F., Davenport, G.M. Effects of a program of human interaction and alterations in diet composition on activity of the hypothalamic-pituitary- adrenal axis in dogs housed in a public animal shelter. JAVMA, 221 (1), 65-71, 2002.

Hennessy M.B., Voith V.L., Young, B.S., Hawke,J.L., Centrone, J., McDowell, A.I., Linden F., Davenport, G.M. Exploring the Effects of Human Interaction and Diet on the Behavior of Dogs in a Public Animal Shelter. JAAWS, 5(4), 253-273, 2002.

Steiss J.E., Schaffer C, Ahmad H.A., and Voith V.L. Evaluation of Plasma Cortisol Levels and Behavior in Dogs Wearing Bark Control Collars. In press: Applied Animal Behaviour Science, 2007.

Voith V.L. Hospital policies for managing behavioral problems. California Veterinarian 61(3):20-21, 2007.

Voith V.L. Preventing Aggression in Veterinary Settings. California Veterinarian 63(5):15-17, 2009..

Voith V.L. The Impact of Companion Animal Problems on Society and the Role of Veterinarians. Vet Clin Small Anim 39, 327-345, 2009.

Voith V.L., Ingram E., K Mitsouras, Irizarry K. Comparison of Adoption Agency Breed Identification and DNA Identification of Dogs. Journal of Applied Animal Welfare Science, 12 (3), 253-262, 2009.

Voith V.L. et al, Inter-observer Reliability of Visual Identification of Mixed Breed Dogs and Comparison to DNA Identification, in preparation

Unrefereed Data Based Publications:

Voith, V. L. Clinical Animal Behavior. California Veterinarian, June 1979, pp. 21-25.

Voith, V. L. Profile of 100 Animal Behavior Cases. Modern Veterinary Practice, 62(6), pp. 483-484, June, 1981.

Ganster, D. and Voith, V. L. Attitudes of Cat Owners Toward Their Cats. Feline Practice, 13(2), 1983, 21-29.

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Books Edited:

Voith, V. and Borchelt, P.L. The Veterinary Clinics of North America, Symposium on Animal Behavior, Small Animal Practice, 12(4), 1982, W.B. Saunders Co., Philadelphia.

Quackenbush, J. and Voith, V.L. The Veterinary Clinics of North America, Symposium on Human-Animal Bond, Small Animal Practice, 15(2), 1985, W.B. Saunders Co., Philadelphia.

Marder, A. R. and Voith, V.L. The Veterinary Clinics of North America, Symposium on Advances in Companion Animal Behavior, Small Animal Practice, 21(2), 1991, W.B. Saunders Co. Philadelphia.

Voith, V.L. and Borchelt, P.L. Readings in Companion Animal Behavior, 1996, Veterinary Learning Systems, Trenton, N.J.

Voith, V.L. and Estep, D. Consulting Editors for Equine Behavior . In Lavoie J-P and Hinchcliff (Eds.) The 5-Minute Veterinary Consult, Equine. 2nd Ed , Blackwell Press, 2008.

Book Chapters:

Voith, V. L. and Hart B. L. Chapter 19. Behavioral Disorders, Section 1, Principles of Behavior. In Hoerlein, B.F. (ed.): Canine Neurology. W.B. Saunders Co., Philadelphia, 1978, pp. 667-694.

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Voith, V. L. Feline Male Reproductive Behavior. In Morrow, D. A. (ed.): Current Therapy in Theriogenology, W.B. Saunders Co., Philadelphia, 1980, pp. 845-848.

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Borchelt P. L. and Voith, V. L. Classifications of Animal Behavior Problems. In Ibid, pp. 571-85.

Voith, V. L. and Borchelt P. L. Diagnosis and Treatment of Dominance Aggression in Dogs. In Ibid, pp. 655-63.

Borchelt, P. L. and Voith, V. L. Diagnosis and Treatment of Separation Anxiety in Dogs. In Ibid, pp. 625-35.

Voith, V. L. and Borchelt P. L. Differential Diagnosis of Canine Elimination Problems. In Ibid, pp. 6377-44.

Borchelt, P. L. and Voith, V. L. Diagnosis and Treatment of Cat Elimination Behavior Problems. In Ibid, pp. 673-81.

Borchelt, P. L. and Voith, V. L. Diagnosis and Treatment of Cat Aggression Problems. In Ibid, pp. 665-71.

Voith, V. L. Behavioral Disorder, Chapter. In Ettinger, S. J. (ed.): Textbook of Veterinary Internal Medicine, W.B. Saunders Co., Philadelphia, 1983, chapter 24: pp. 208-227.

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Voith, V. L. Cat Behaviour Problems: In Anderson, R. (ed.) Nutrition and Behaviour in Dogs and Cats. The First Nordic Symposium on Small Animal Veterinary Medicine. Pergamon Press, Oxford, 1983, pp. 217-226.

Voith, V. L. Possible Pharmacological Approaches to Treating Behavioral Problems in Animals. In Ibid, pp. 227-34.

Voith, V. L. Mensch-Tier-Beziehungen. In Anderson, R. S. and Meyer, H. (eds.): Ernahrung und Verhalten von Hund und Katze. Schlutersche, Hannover, 1984, pp. 169-177.

Voith, V. L. Verhaltensprobleme bei der Katze. In Ibid, pp. 217-228.

Voith, V. L. Moglichkeiten zur medikamentosen Behandlung. In Ibid, pp. 229-237.

Voith, V. L. Chapter 18. Behavioural Problems. In Chandler, E. A., et al. (ed.): Canine Medicine and Therapeutics, British Small Animal Veterinary Association Textbook of Canine Medicine, Blackwell Scientific Publications, London, 2nd edition, 1984.

Voith, V. L. Owner/Pet Attachment Despite Behavior Problems. In Kay, W. et al. (eds.): Pet Loss and Human Bereavement. Iowa State University Press, Ames, Iowa, 1984, pp. 135-142.

Voith, V. L. Attachment between people and companion animals. In Quackenbush, J. and Voith V. L. (eds.): Symposium on Human-Companion Animal Bond: Veterinary Clinics of North America, W.B. Saunders, Philadelphia, 1985, pp. 289-295.

Voith, V. L. Chapter 17. Behavioral Disorders. In Davis L. (ed.): Manual of Therapeutics in Small Animal Practice. Churchill Livingstone, Inc., N.Y., 1985, pp. 519-548.

Voith, V. L. and Marder A. R. Section 14: Behavioral Disorders. Chapter 93: Introduction to Animal Behavior Problems; Chapter 94: Canine Behavioral Disorders; Chapter 95: Feline Behavioral Disorders. In Morgan, R. V. (ed.): Handbook of Small Animal Practice, Churchill Livingstone, Inc., N.Y., 1988, pp. 1031-1051.

Voith, V. L. Principles of Learning. In Crowell-Davis S. and Houpt, K. A. (eds.) Veterinary Clinics of North America: Equine Practice, symposium on Behavior, 2(3) Philadelphia, W.B. Saunders Co., 1986, pp. 485-505.

Voith, V. L. Behavioral Disorders in Ettinger, S. (ed): Textbook of Veterinary Internal Medicine, 3rd edition, W. B. Sanders Co., Philadelphia, 1989, pp 227-238.

Voith, V. L. Applied Animal Behavior and the Veterinary Profession: A Historical Account In Marder A.R. and Voith V. L. (eds): Veterinary Clinics of North America: Small Animal Practice; Advances in Companion Animal Behavior: 21 (2), W. B. Saunders Co., Philadelphia, 1991 pp. 203-206.

Voith, V.L. and Marder, A.R. Chapter 118: Introduction to Behavioral Disorders. Marder, A. R. and Voith, V. L. Chapter 119: Canine Behavioral Disorders; Marder, A. R. and Voith, V. L. Chapter 120: Feline Behavioral Disorders. In Morgan, R.V. (ed): Handbook of Small Animal Practice, Second Edition, Churchill Livingstone, Inc., N.Y., 1992.

Voith, V.L. Training Problems. In Brown C.M. , and Bertone J.J. (eds): The 5-Minute Veterinary Consult, Equine. Lippincott Williams & Wilkins, 2002,pp 1068-1069.

Voith, V.L. Pediatric Behavior Problems – Cats. In Tilley L.P. and Smith, F.W.K. (eds): The 5-Minute Veterinary Consult Canine and Feline, Third Edition, Lippincott Williams & Wilkins, 2004, pp. 984-985.

Voith, V.L. Pediatric Behavior Problems – Cats. In Tilley L.P. and Smith, F.W.K. (eds): The 5-Minute Veterinary Consult Canine and Feline, Fourth Edition, 2007, Pp 1042-1043.

Voith, V.L. Training and Learning Problems. In Lavoie J-P and Hinchcliff (Eds.) The 5-Minute Veterinary Consult, Equine. 2nd Ed , Blackwell Press, 2008, 766-768.

Voith, V.L. and Estep, D. Aggression . In Lavoie J-P and Hinchcliff (Eds.) The 5-Minute Veterinary Consult, Equine. 2nd Ed , Blackwell Press, 2008, pp 44-45.

Voith, V.L. Veterinary Clinics of North America: Small Animal Practice: Veterinary Public Health The Impact of Companion Animal Problems on Society and the Role of the Veterinarian Vol 39, No 2, March 2009 p327-345

Published Proceedings (original papers):

Voith, V. L. Diagnosis and Treatment of Animal Behavior Disorders. Proceedings 6th World Congress, World Small Animal Veterinary Association, Post Academisch Onderwijs Publikatie No. 8, 1977.

Voith, V. L. Proposed Functional Significance of Pseudocyesis in the Canine. Proceedings of the American Association of Zoo Practitioners, 1977.

Voith, V. L. Diagnosis and Treatment of Aggressive Behavior Problems in Dogs. AAHA's 47th Annual Meeting Proceedings, 1980.

Voith, V. L. Applied Animal Behavior for the Veterinary Practitioner. AAHA's 47th Annual Meeting Proceedings, 1980.

Voith, V. L. Fundamentals of Animal Behavior and Its Practical Application. Kansas State VMA and College of Veterinary Medicine, Kansas State Univ. Nov. 1985

Voith, V.L. Aggression Behavior of Cats Toward People. Proceedings of the 12th Kal Kan Symposium, 1988.

Voith, V.L. Attitudes towards and interactions with companion dogs and cats. Convegno Interdisciplinare Su: "Il ruolo Degli Animali Da Compagnia Nella Societa Odierna" Milano 6 Dicembre 1987

Voith, V.L. Use of Crates in the Treatment of Separation Anxiety in Dogs. 2002 AVMA Convention Notes, 2002.

Voith, V.L. Serious Dog Attacks. 2003 AVMA Convention Notes, 2003.

Voith, V. L. Comparison of Visual and DNA Identification of Dogs. 2009 AVMA Annual Convention Notes. July 12, 2009, Seattle, WA

Voith V.L. Impact of Companion Animals Problems on Society 2009 AVMA Annual Convention Notes. July 13, 2009, Seattle, WA

Voith V L. Interactive Dog Breed Presentation. APDT Annual Meeting, Oct 25, Oakland, CA

Marder A and Voith VL The American shelter dog: identification of dogs by personality, Proceedings of the 7th International Veterinary Behaviour Meeting p 23-26, Edinburgh Scotland UK 28-31 Oct 2009

Victoria L Voith, Dog Breed Identification, NACA Summit, Annual Meeting, May, 2010.

Voith, V L. Improving Communications: Inter-rater reliability of dog breed identification and comparison to DNA analysis, 2010 AVMA Annual Convention Notes, July 31, 2010, Atlanta, GA

Numerous other original papers published as proceedings, including numerous pre 2000 AVMA Annual Meetings, SouthWest Veterinary Medical Conference 2004, MidWestern Veterinary Medical Symposium, Citations unavailable at this time.

Poster Presentations:

Voith V L, Bond C, Ingram E, Irizarry K, Mitsouras K, Marilo J. Comparison of Adoption Agency Identification and DNA Breed Identification of Dogs. Evidence Based Veterinary Medicine Symposium, June 14-15, 2010, Pomona CA

**Voith V L, Chadik C, Ingram E, Irizarry K, Mitsouras K, Marilo J. Dog Breed Identification, ACVB/AVSAB Symposium, July 30, 2010 Atlanta GA
Won Best Poster Award**

Unrefereed Journal Publications:

Voith, V. L. Destructive behavior in the owner's absence. Parts I and II Canine Practice, 2(3):11; 2(4):8-12, 1975.

Voith, V. L. Care of the newborn foal. Ohio 4-H Cooperative Extension Service, 1976.

Voith, V. L. Fear induced aggression in dogs. Canine Practice, Sept.-Oct., 1976.

Voith, V. L. Aggressive Behavior and Dominance. Canine Practice, 4: 8-15, 1977.

Hart, B. L. and Voith, V. L. Sexual behavior and behavioral problems in cats. Feline Practice, 7, No. 1, pp. 9-12, 1977.

Voith, V. L. Canine housebreaking: Training the Puppy and Retraining the Adult. Methods, The Journal of Animal Health Technology, Vol. 3, No. 1, pp. 10-16, 1979.

Voith, V. L. Principles of Learning. Methods, Vol. 3, No. 2, pp. 8-13, 1980.

Voith, V. L. Coming When Called and the Sit-Stay. Methods, Vol. 3, No. 3, pp. 13-20, 1980.

Voith, V. L. Submissive Urination. Methods, Vol. 3, No. 4, pp. 5-7, 1980.

Voith, V. L. The over-exuberant One-dog Welcoming Home Committee. Methods, Vol. 3, No. 5, pp. 5-11, 1980.

Voith, V. L. Trimming Toe Nails and Liking It. Methods, Vol. 3, No. 6, pp. 6-9, 1981.

Voith, V. L. Separation Anxiety In Dogs. Kal Kan Forum 3(1):4-9, 1984.

Voith, V. L. Elimination Behavior Problems in Cats. Kal Kan Forum 3(3):60-64, 1984.

Voith, V. L. and Borchelt, P. L. The Dog that cannot be left alone. Veterinary Technician 6(2):95-97, 1985.

Voith, V. L. and Borchelt, P. L. Fears of Thunderstorms and other Loud Noises. Veterinary Technician 6(4):189-192, 1985.

Voith, V. L. and Borchelt, P. L. The Fearful Dog. Veterinary Technician 6(9):435-437, 1985.

Voith, V. L. and Borchelt, P. L. Introducing a dog to a new baby. Veterinary Technician 6(10):469-498, 1985.

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Voith, V. L. and Borchelt, P. L. Strangers and the Family Dog. Veterinary Technician 8(4):211-214, 1987.

Voith, V. L. and Borchelt, P. L. Dealing with Your Overactive Dog. Veterinary Technician 8(8), 1987.

Voith, V. L. How to Analyze Animal Behavior. Veterinary Technician Vol II (5):343-345, 1990.

Voith, V. L. The Aggressive Feline. Part I. Fear Induced Aggression. Veterinary Technician Vol 12(8): pp. 547-550, 1991.

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Learning Principles and Behavioral Problems. MVP 60 (7), pp. 553-555, July, 1979.

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Treatment of Fear Reactions: Canine Aggression. MVP 60 (11), pp. 903-905, Nov., 1979.

Effects of Castration on Mating Behavior. MVP 60 (12), pp. 1040-1041, Dec., 1979.

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Play a Form of Hyperactivity and Aggression. MVP 61 (7), pp. 631- 632, July, 1980.

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An approach to Ameliorating Aggressive Behavior of Dogs toward Children. MVP 62 (1), pp. 67-70, Jan., 1981.

Understanding and Coping with Emotional Clients. MVP 62, (5), pp. 394-396, May, 1981.

You, too can teach a cat tricks... MVP 62 (8), Aug., 1981.

Diagnosing Dominance Aggression. MVP 62 (9), Sept., 1981.

Elimination Behavior Problems in Dogs, MVP October, 1981.

Treating Elimination Behavior Problems in Dogs and Cats: The Role of Punishment. MVP 62 (12), Dec., 1981.

Treatment of Dominance Aggression of Dogs toward People. MVP 63 (2), Feb., 1982

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Procedures for Introducing a Baby to a Dog. MVP, July, 1984.

1985 & 1986 Victoria L Voith & Peter L Borchelt authored 12 pamphlets on dog and cat behaviors, published by Veterinary Learning Systems, Trenton, New Jersey. 85 Million printed and distributed.

C

UNITED STATES DISTRICT COURT
EASTERN DISTRICT OF WASHINGTON

NICHOLAS CRISCUOLO, individually;
and TAXPAYERS OF THE CITY OF
MOSES LAKE ex rel. NICHOLAS
CRISCUOLO;

Plaintiff,

vs.

GRANT COUNTY, et al.,

Defendants.

Case No.: CV-10-470-LRS

PLAINTIFF'S FRCP 26(A)(2)
DISCLOSURE:

Report of Dr. Kristopher Irizarry

FRCP 26(a)(2)(B)(i): Complete Statement of All Opinions

1. I have been asked to give an expert opinion concerning (1) whether dog breeds were selected for specific behaviors or, rather, for anatomical, physical, and morphological traits, (2) whether dogs of the same breed exhibit the same behaviors, (3) whether animal control officer, police officer, veterinary school, or dog obedience training produces individuals competent to accurately visually identify dog breeds in mixed breed dogs, (4) whether mixed breed dogs exhibiting a subset of a breed's conformation/physical traits would be expected to exhibit the same behavior as that breed; (5) whether dangerous or hazardous dogs can be identified by breed; (6) whether the methodology (or lack thereof) utilized by the City of Moses Lake in enforcing MLMC 6.06.010(A)(3) is arbitrary, capricious, unreasoning, and not based on sound

IRIZARRY REPORT - 1

ANIMAL LAW OFFICES OF

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scientific principles; and related issues.

2. In addition to the documents reviewed as stated below, I depend on the professional literature in the sciences of genetics, genomics, neurobiology, neuroscience and veterinary medicine. It is this body of empirical research and theory that informs my professional opinions:

- Linkage and segregation analysis of black and brindle coat color in domestic dogs. Kerns JA, Cargill EJ, Clark LA, Candille SI, Berryere TG, Olivier M, Lust G, Todhunter RJ, Schmutz SM, Murphy KE, Barsh GS. *Genetics*. 2007 Jul;176(3):1679-89.
- Coat variation in the domestic dog is governed by variants in three genes. Cadieu E, Neff MW, Quignon P, Walsh K, Chase K, Parker HG, Vonholdt BM, Rhue A, Boyko A, Byers A, Wong A, Mosher DS, Elkhouloun AG, Spady TC, André C, Lark KG, Cargill M, Bustamante CD, Wayne RK, Ostrander EA. *Science*. 2009 Oct 2;326(5949):150-3.
- The long and the short of it: evidence that FGF5 is a major determinant of canine 'hair'-itability. Housley DJ, Venta PJ. *Anim Genet*. 2006 Aug;37(4):309-15.
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- A single IGF1 allele is a major determinant of small size in dogs. Sutter NB, Bustamante CD, Chase K, Gray MM, Zhao K, Zhu L, Padhukasahasram B, Karlins E, Davis S, Jones PG, Quignon P, Johnson GS, Parker HG, Fretwell N, Mosher DS, Lawler DF, Satyaraj E, Nordborg M, Lark KG, Wayne RK, Ostrander EA. *Science*. 2007 Apr 6;316(5821):112-5.
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- Relationships between gene expression and brain wiring in the adult rodent brain. French L, Pavlidis P. *PLoS Comput Biol*. 2011 Jan 6;7(1):e1001049.
- An anatomic gene expression atlas of the adult mouse brain. Ng L, Bernard A, Lau C, Overly CC, Dong HW, Kuan C, Pathak S, Sunkin SM, Dang C, Bohland JW, Bokil H,

Mitra PP, Puelles L, Hohmann J, Anderson DJ, Lein ES, Jones AR, Hawrylycz M. *Nat Neurosci.* 2009 Mar;12(3):356-62.

- Comparison of Adoption Agency Breed Identification and DNA Breed Identification of Dogs. Voirth VL, Ingram E, Mitsouras K, Irizarry K. *J. App. Animal Welfare Sci.* 12:3, 253-262 (2009).

My opinions are also widely accepted by virtually all experts in the fields of genetics and neurobiology. I am not aware of any dispute, much less a significant one, by qualified experts in these germane scientific communities concerning the theories and methodologies employed by me in drawing these conclusions.

3. With a level of confidence beyond reasonable scientific certainty and evidentiary preponderance, and based on my training, familiarity with professional literature, and experience, implementing well-grounded and generally accepted methodologies and theories, I reach the following expert conclusions:

(1) Dog breeds have been selected and differentiated based on anatomical features.

(2) Anatomical features associated with dog breeds are found in many different breeds.

(3) AKC dog breeds are defined through a closed breeding pool.

(4) Dog breeds can be defined at the genetic level as lacking genetic variation in some regions of the genome, i.e., German Shepherds lack the genetic variants associated with the very short snout found in the French Bull dog.

(5) A mixed breed dog is not a member of a breed.

(6) The defining anatomical features of dog breeds are the result of a handful of genes that have been identified and listed in peer-reviewed scientific publications.

(7) The anatomical features associated with dog breeds do not encode the brain or the connections of brain cells and are not involved in encoding the behavior of a dog.

IRIZARRY REPORT - 3

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1 (8) Unlike identical twins in humans – who have identical DNA, members of dog breeds
2 may look the same and have very different DNA.

3 (9) Dogs with open breeding pools, such as mixed breed dogs, cannot be considered a
4 member of a specific breed.

5 (10) A dog that is 25% Labrador Retriever is not eligible to compete in an AKC dog
6 show for Labrador Retrievers.

7 (11) Visual identification of dog breeds is inaccurate.

8 (12) Visual identification of dog breeds differs from DNA identification of dog breeds.

9 (13) The lack of efficacy in identifying dog breeds is the result of relatively few regions
10 of the genome being associated with anatomical traits.

11 (14) Moses Lake's approach to identifying dog breeds in mixed breed dogs based upon
12 visual inspection for particular anatomical features is not scientifically valid.

13 (15) The anatomical similarity of dogs within a breed causes people to assume that dogs
14 within a breed share other traits, such as behavior, health and disease susceptibility, yet this
15 assumption is flawed.

16 (16) There is no scientific basis for better-than-chance visually accurate breed
17 identification by animal control officers and does not meet the *Frye* or *Daubert* test for
18 admissibility.

19 (17) Animal professionals, including veterinarians, dog breeders, dog show judges,
20 animal control officers and others are not capable of accurately identifying breeds in mixed breed
21 dogs.

22 (18) The manner in which mixed breed dogs are visually identified is so subjective as to
23 be arbitrary and capricious.

24 **IRIZARRY REPORT - 4**

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1 (19) Santiago Reyna has made identifications, but has never confirmed that his
2 identifications are correct by independent, scientifically valid corroborating evidence. Thus, the
3 accuracy is unknown, untested and unscientific. This is underscored by the fact that Dymond was
4 not identified as hazardous in a photo seen by Ofc. Reyna during deposition.

5 (20) An "element" is undefinable in terms of mixed dog breeds.

6 (21) Even using DNA, an "element" is vague and unable to be intelligently applied since
7 all dogs share 99.9975% of their DNA across breeds.

8 (22) An element cannot be reliably visually identified in a mixed breed dog.

9 (23) An element of a mixed breed dog identified visually by Ofc. Reyna does not
10 scientifically or rationally ensure the presence of one of the prohibited breeds under MLMC
11 6.06.010(A)(3).

12 (24) The notion that the presence of an anatomical feature, i.e., smooth coat, correlates
13 with behavior is not rational.

14 (25) Visual identification of mixed breed prohibited dogs under MLMC 6.06.010(A)(3)
15 does not reliably or rationally meet the purported goals of Ch. 6.06 MLMC (i.e., to ensure that
16 dogs are classified accurately and banished or euthanized to protect the public safety).

17 (26) Breed bans do not work because bite rates do not go down; thus, there is no rational
18 basis in terms of increasing public safety.

19 (27) There is no scientific evidence that the breeds listed in MLMC 6.06.010(A)(3) are
20 more aggressive or dangerous than other dogs. This is due, in part, to the problem of acquiring
21 accurate statistics on the total number of dogs. N.B.: the CDC specifically stated that its fatal
22 study was not to be used for breed bans.

23 (28) Since studies regarding breeds and bites rely in the end on visual identification by
24

25 **IRIZARRY REPORT - 5**

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lay people, they are totally inaccurate and unscientific.

(29) The science of dog DNA is the most accurate method to determine mixed breed dogs and will supplant visual identifications.

(30) Most people erroneously believe that dog breeds were bred for specific behaviors. This is a stereotype unsupported by the recent scientific findings that identify anatomical traits as the foundation of breed stratification.

(31) Most people erroneously believe that a mixed breed dog that contains an anatomical component in common with a specific breed must be a member of that breed. However, by definition, a mixed breed dog is not a member of a specific dog breed.

(32) The stratification of dogs into breeds reduces the genetic variation within a breed. Once a member of the breed is crossed with other breeds of dogs, it gains the genetic variation from these other dogs and loses the genetics associated with a single breed.

(33) Regardless of whether someone inaccurately believes that a specific breed has a certain behavior or “dangerousness,” a dog with moderate or minor/trace amounts of that breed has the majority of its genome derived from breeds other than the breed in question.

(34) It is not rational or scientifically valid to assume that a dog can be defined as dangerous by virtue of having “any element” of a particular breed.

(35) The visual identification of dogs has been used to identify the dangerousness of specific breeds historically. My review of this practice leads me to conclude, however, that whatever breed is arbitrarily defined as dangerous gets blamed for dog bites by the media. Furthermore, none of the mixed breed dogs previously involved in dog bites have been accurately assessed for breed composition.

(36) The notion that any element of some breed would make a dog dangerous is not

IRIZARRY REPORT - 6

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1 rational and metaphorically akin to stating that “any car that has the same color as a car driven by
2 a drunk driver is a dangerous car.”

3 (37) Incorporating by reference attached exhibits.

4 **FRCP 26(a)(2)(B)(ii): Facts or Data Considered in Forming Opinions**

5 4. I have reviewed the following materials in arriving at my opinion: *Deposition of Dean*
6 *Mitchell, Deposition of Santiago Reyna, Answers and Responses to Plaintiff's First Discovery*
7 *Requests to the City of Moses Lake*, public records responses from the City of Moses Lake,
8 genetic breed profiles reported as to specific dogs tested by Mars Veterinary, maker of the
9 Wisdom Panel® Professional Canine Genetic Analysis, which is reasonably relied upon by
10 experts in my fields of expertise in forming opinions and inferences on the subjects herein.

11 **FRCP 26(a)(2)(B)(iii): Exhibits Used to Summarize or Support Opinions**

12
13 5. Exhibits used to summarize and support my opinions include those used in the
14 depositions of Mitchell and Reyna, as well as attached.

15 **FRCP 26(a)(2)(B)(iv): Expert Qualifications – List of Publications**

16
17 6. The attached curriculum vitae provides my qualifications and list of publications
18 authored by me in the past ten years.

19 **FRCP 26(a)(2)(B)(v): Prior Testimony**

20
21 7. In the past four years, I have not testified as an expert at trial or by deposition.

22 **FRCP 26(a)(2)(B)(vi): Compensation**

23 8. I am charging \$50 per hour to the Plaintiff for my study and testimony in the case,
24 including costs of travel, room, and board. I will charge \$100 per hour, plus costs of travel,

25 **IRIZARRY REPORT - 7**

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1 room, and board should Defendant depose me or if I am called to testify at trial.

2 9. I reserve the right to amend and change my declaration and expert opinions as I review
3 further evidence presented in this case, including but not limited to depositions and live
4 testimony and FRCP 26(a)(2) disclosures by the Defendant.

5 Executed this Aug 17, 2011 in the city of Pomona, California

6
7 Kristopher Irizarry, Ph.D.
8 KRISTOPHER IRIZARRY, PH.D.

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25 **IRIZARRY REPORT - 8**

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Kristopher J. L. Irizarry, Ph.D.

CURRICULUM VITAE

kirizarry@westernu.edu

309 E. Second Street

Pomona, California 91766-1854

Updated: March 2011

EDUCATION:

B.S. Biochemistry & Biophysics, 1996

Rensselaer Polytechnic Institute, Troy New York

Ph.D. Biochemistry & Molecular Biology, 2003

Dissertation Title “*Identification and Analysis of Single Nucleotide Polymorphisms in the Coding Regions of the Human Genome*” University California, Los Angeles

Postdoctoral Fellowship UCLA Center for Pharmacogenomics

Pharmacogenomics of Antidepressant Treatment Response

Neuropsychiatric Institute, David Geffen School of Medicine at UCLA

PROFESSIONAL EXPERIENCE:

2006 - present Assistant Professor, Bioinformatics, Genetics & Genomics
College of Veterinary Medicine
Western University of Health Sciences
Pomona, California

2004-2005 Lecturer / Researcher
Neuropsychiatric Institute (NPI)
University California, Los Angeles, CA

2003- 2004 Postdoctoral Fellowship Neuropsychiatric Institute (NPI),
University of California, Los Angeles, CA.

2000 Teaching Assistant: Biochemistry and Molecular Biology
University California, Los Angeles, CA

1998-1999 Teaching Assistant: Molecular, Cellular, and Developmental Biology
University of California, Los Angeles, CA

1998-2003 Graduate Student, Laboratory of Bioinformatics & Structural Genomics,
University of California, Los Angeles, CA.

1997 Bioinformatics Research Internship
Incyte Pharmaceuticals
Palo Alto, CA

1995-96 Research Assistant, Center for Biophysics,
Rensselaer Polytechnic Institute, Troy NY

1995 Summer Research Position, NINDS/
National Institutes of Health, Bethesda, MD

1994-95 Research Assistant, Addictions Laboratory, RPI, Troy, NY

PROFESSIONAL ACTIVITIES:

California Veterinary Medicine Association – faculty membership
 Evidence Based Veterinary Medicine Association – charter membership
 California Science Fair – Judges Advisory Committee
 Advisor – Genetics, National Canine Research Council
 Coordinator – Western University Students Research and Technology Symposium (STARS)

HONORS AND AWARDS:

2003 – 2004 NIH T32 Psychobiology Postdoctoral Fellowship
 2000 - 2003 NSF Integrative Graduate Education and Research Traineeship
 1998 - 2000 NIH Biotechnology Training Grant
 1994 - 1996 Rensselaer Scholarship

RESEARCH FUNDING:

9/1/08-12/30/11 Research Contract \$19,000
PI: K. Irizarry Hills Pet Nutrition
 “Nutrigenomics: comparative genomics analysis of novel gene sequences”

1/1/09 - 12/31/11 USDA \$325,000
 “Impact of immune responses of chickens with defined B haplotypes on resistance to respiratory infection” PI: Ellen Collisson, Yvonne Drechsler, **Co-investigators: K. Irizarry**, M Saggese

10/2009-9/2011 Institute of Museum and Library Services \$100,000
 “Correlation of Snow Leopard Genetics with Immune Function: A Model for the Integration of Functional Genomics into Endangered Species Captive Breeding Plans.”
 IMLS Collaborative Planning Grant
 Project Director: Margaret C. Barr; **Co-PIs: Kristopher Irizarry**, Janis Joslin, Collaborators Todd Mockler, Jay Tetzloff

1/1/07-12/30/08 Research Subcontract \$20,000
PI: K. Irizarry Center for Neuroeconomic Studies, Claremont Graduate University
 “Analysis of genes associated with behavioral and neuroeconomic phenotypes in humans”

7/1/07 Anonymous Gift value: \$15,000
PI: K. Irizarry hardware donation
 “Computational Infrastructure for cluster computing genomics applications”

7/1/2007-6/30/08 Intramural Research Grant \$15,000
PI: K. Irizarry Western University of Health Sciences
 “Identification and analysis of genes underlying behavioral phenotypes: combining bioinformatics, comparative genomics and sequencing to accelerate discovery in the canine genome”

9/30/02-9/29/07 NIDDK/NIH \$80,000
 PI: Julio Licinio, M.D. R01 DK063240
Co-investigator: Kris Irizarry, Ph.D., awarded a minority supplement for this project.
 “Depression and Metabolic Syndrome in Mexican-American Women”

09/28/04-07/31/07 NCRR/NIH \$42,000
 PI: Robert M. Bilder 1P20RR020750
Co-investigator: Kris Irizarry, Ph.D
 “Cognitive Phenotyping for Neuropsychiatric Therapeutics”

09/30/83-06/30/08 NIMH/NIH \$33,000
PI: Andrew F. Leuchter 5T32MH017140-20
Post-doctoral fellow: Kris Irizarry, Ph.D.
"Research Training: Psychological Sciences"

LECTURES & PRESENTATIONS & POSTERS:

Kristopher Irizarry "Comparative Mammalian Phenomics" *Guest Lecturer at Oregon State University Graduate Course in Genomics*. March 4th and March 7th, 2011

Katherine Mitsouras, Erica A. Faulhaber, Gordon Hui, **Kristopher J. L. Irizarry**. "Development of a PCR-assay to detect papillomavirus in the snow leopard." *Plant and Animal Genomics Meeting*. San Diego, California, January 15-19, 2011

V. Voith, C. Chadik, E. Ingram, **K. Irizarry**, K. Mitsouras, J. Marilo. "Dog Breed Identification". *American College of Veterinary Behaviorists and The American Veterinary Society of Animal Behaviorists* Atlanta, Georgia, 2010

Hui, Erica Faulhaber, Aleli Camacho, Katherine Mitsouras, **Kristopher Irizarry**. "Construction of a Comparative Genomics Map To Facilitate The Annotation Of The Draft Snow Leopard Genome". *Merial Veterinary Scholar's Symposium*, Athens, Georgia, August 2010.

Kristopher Irizarry "How to facilitate student use of published and online resources during creation of science projects" *Presentation for Mentors of California Science Fair Students*, California Science Fair May 2010.

Katherine Mitsouras, Gabrielle Galgoul, Audrey Hoholm, Cheng Li, **Kristopher Irizarry** "Using bioinformatics and comparative genomics to map cancer associated phenotypes to the canine genome." *Genes, Dogs & Cancer: 5th International Canine Cancer Conference* February 13 – 15, 2009, Orlando Florida (submitted abstract was accepted for poster presentation in February 2009)

Irizarry, Kristopher "'The great debate - Does behavioral genetics imply behavior is deterministic? Reflections on free will, determinism and the contributions of nature and nurture to animal behavior" *Western University College of Veterinary Medicine Behavior Club* – Invited Talk – November 2008.

Irizarry, Kristopher "Developing novel comparative genomics based phenotype annotation for use in the publicly available gene expression analysis software package DChip" *Department of Biostatistics and Computational Biology*, Dana Farber Cancer Institute, Harvard University, Boston MA, Oct. 29, 2008.

Irizarry, Kristopher "Bioinformatics and Comparative Genomics Approaches for Annotating The Chicken Genome" *USDA Multistate Immunogenetics Research Poultry Meeting*, October 16 2008, Washington DC.

Irizarry, Kristopher "Leveraging Comparative Genomics to Infer-Functional Consequences of Gene Expression Changes: Accelerating Microarray Discovery via Phenomics Annotation" *Cambridge Healthtech's Eighth Annual Integrative Data Analysis Conference*, Providence Rhode Island, Sept. 24, 2008

V. Voith & **Irizarry, K** "Dog Breed Identification Quiz and DNA results" *Orange Belt Veterinary Medical Association*, Riverside CA - September 16, 2008

Irizarry K "Decoding Dog DNA: finding physiology and pathology in the canine genome" *Western University of Health Sciences Research Seminar*: Pomona, California August 27, 2008

Irizarry, Kristopher "An introduction to the genetics of behavior" *Charles Drew University, Los Angeles California*, August 12, 2008.

Irizarry, Kristopher "Comparative Genomics: From Mice to Men and Dogs" *Western/Drew Research Retreat at the California Endowment Center for Healthy Communities in Los Angeles*. July 15, 2008.

Irizarry, KJ "Managing a collaborative Problem-Based Learning Curriculum" *Lilly-West SoTL Conference*, Pomona California, March 22, 2008

Irizarry K "Understanding canine genetics as it relates to dog breeds and behavior" *Invited Talk for The Farm Animal Foundation*, New York, Oct. 2007

Irizarry KJL, Day A, Mitsouras K, Lee CJ, Wong ML, Licinio J. "Novel Strategies for Psychiatric Pharmacogenomics" *Pharmacogenetics Research and Knowledge Base Fourth Scientific Meeting* Los Angeles, California March 8, 2004.

Irizarry K, Day, A, Mitsouras K, Lee C, Wong ML, Licinio J. "Identification and Integration of Diverse Genomic Signals: Building Neuroinformatics Tools for Pharmacogenomics Applications" *International Society of Pharmacogenomics Meeting* LA, CA Nov. 2003.

Irizarry K, Day, A, Mitsouras K, Lee C, Licinio J. "Identifying candidate SNPs for high-throughput pharmacogenomics studies of CNS disorders" *International Pharmacogenomics Joint Cold Spring Harbor Laboratory/Wellcome Trust Conference*, Hinxton UK Sep. 25, 2003

Irizarry, K, Galbraith, S, Miller, D, Lee, C. "Genomic SNP Mapping" *Lake Tahoe Symposia on Molecular Diversity*, January 29 - February 2, 2001

Lin, XJ, **Irizarry, K.**, Lengyel, JA "Drosophila Arc, a novel membrane associated PDZ domain protein is involved in epithelial morphogenesis" *39th Annual Drosophila Research Conference* Washington D.C. March, 1998

Chambers, M. D., **Irizarry, K. L.**, Boswell, K. J., Hubbell, C. L., & Reid, L. D., "A Selective Opioid Antagonist Block's Cocaine's Rewarding Effects" Presented at the *American Psychological Association Annual Conference*, New York, New York, August 1995.

PAPERS - IN REVIEW / PREPARATION

Kristopher J. L. Irizarry, Sukhaswami Malladi, Xiangming Gao, Katherine Mitsouras, Lynda Melendez, Patricia Burris, Jeffrey Brockman, Samer Al-Murrani.
"Sequencing and Comparative Genomic Analysis of 1227 *Felis catus* cDNA Sequences Enriched for Developmental, Clinical and Nutritional Phenotypes"

manuscript in preparation, anticipated submission for Genome Biology date: April 15 2011.

Katherine Mitsouras, Erica Faulhaber, Gordon Hui, Janis Joslin, Curtis Eng, Margaret C. Barr, **Kristopher J. L. Irizarry** "Development of a PCR Assay to Detect Papillomavirus Infection in the Snow Leopard" BMC Veterinary Research, submitted Jan. 26, 2011, *under review*

PAPERS – PEER REVIEWED

Liao G, Wen Z, **Irizarry K**, Huang Y, Mitsouras K, Darmani M, Leon T, Shi L, Bi X. Abnormal gene expression in cerebellum of Npc1^{-/-} mice during postnatal development. Brain Res. 2010 Apr 14;1325:128-40.

Voith VL, Ingram E, Mitsouras K, **Irizarry K**. Comparison of adoption agency breed identification and DNA breed identification of dogs. J Appl Anim Welf Sci. 2009 Jul;12(3):253-62.

John David and **Kristopher Irizarry** "Using the PubMatrix literature mining resource to accelerate student-centered learning in a veterinary PBL curriculum" Journal of Veterinary Medical Education, 2009 Summer;36(2):202-8.

Irizarry K, Merriman B, Bahamonde M, Wong M-L, Licinio J. The evolution of signaling complexity suggests a mechanism for reducing the genomic search space in human association studies. Molecular Psychiatry 2005 AOP doi:10.1038/sj.mp.4001576.

Wong M-L, O'Kirwan F, Hannestad JP, **Irizarry KJL**, Elashoff D, Licinio J. "St. John's wort and imipramine-induced gene expression profiles identify cellular functions relevant to antidepressant action and novel pharmacogenetic candidates for the phenotype of antidepressant treatment response". Molecular Psychiatry 2004; 9:237-251.

Licinio J, O'Kirwan F, **Irizarry K**, Merriman B, Thakur S, Jepson R, Lake S, Tantisira KG, Weiss ST, Wong M-L. "Association of a corticotropin-releasing hormone receptor 1 haplotype and antidepressant treatment response in Mexican Americans". Molecular Psychiatry 2004 AOP doi:10.1039/sj.mp.4001587

Irizarry, K., Hu, G., Wong, M-L., Licinio, J., Lee., CJ "Single Nucleotide Polymorphism Identification in Candidate Gene Systems of Obesity" The Pharmacogenomics Journal 1(3):193-203, 2001.

Lee, C. and **Irizarry, K.** "The GeneMine System for Genome Proteome Annotation and Collaborative Data Mining" IBM Systems Journal 40(2) 592-603 2001.

Irizarry, K., Kustanovich, V., Cheng, L., Brown, N., Nelson, S., Wong, W., Lee, C.J. "Genome Wide Analysis of Single Nucleotide Polymorphisms in Human Expressed Sequences" Nature Genetics 26: 233-236, 2000.

Salerno, J.C., Harris, D.E., **Irizarry, K.**, Patel, B., Morales, A.J., Smith, S.M.E., Jones, C., Weissman, B.A., Liu, Q., and Gross, S.S. "The autoinhibitory control element defines calcium regulated isoforms of nitric oxide synthase" Journal of Biological Chemistry 272 (47) :29769 -29777 Nov. 1997

Reid, Larry D., Hubbell, Christopher L., Glick, Stanley D., Boswell, Karen J., Chen, Alice M., Moran, Catherine M., Cramer, Christopher M., Mullen, Ursula D., Chambers, Michael D., Gonzales, Patricia M., **Irizarry, Kristopher L.**, and Amendola, Christopher A., "Initial Analysis of Naltrexone, a Delta Opioid Antagonist, As a Putative Medicine for Treating Cocaine Abuse." Experimental and Clinical Psychopharmacology 4, 271-284, 1996.

NON-PEER REVIEWED PAPERS

Irizarry KJ, Licinio J. "An explanation for the placebo effect?" *Science* March 307 (5714) 2005.

Irizarry KJ, Galbraith SJ. "Significance of SNP combination patterns" Molecular Psychiatry 9(5):430 2004.

Irizarry KJ, Galbraith SJ. "Complex disorders reloaded: causality, action, reaction, cause and effect." Molecular Psychiatry, 9(5):431-2 2004.

Lee, CJ, **Irizarry, K.**, "Alternative Splicing in the Nervous System: An Emerging Source of Diversity and Regulation" Biological Psychiatry 54(8):771-6 2003.

BOOK CHAPTERS:

Kristopher J. L. Irizarry "Bioinformatics approaches for identifying allelic variants in candidate pathways underlying major depression and antidepressant treatment response" *Biology of Depression* Wiley-VCH Verlag GmbH & Co. KGaA, Weinheim Germany 901-942 copyright 2005.

PATENTS

Licinio, Julio; Wong, Ma-Li; Irizarry, **Kristopher, J., L.**; Irizarry, Katherine, Misouras. "Compositions and methods for determining and predicting treatment responses for depression and anxiety" PCT/US2005/028790, Publication Date:16.02.2006 International Filing Date:12.08.2005

Summary of Points (Pt.1)

- Domesticated dogs were bred for specific morphological and anatomical traits
- The breed-associated anatomical traits are encoded by a very small number of genes (19,000 genes in dog genome, 6 control head shape)
- Tens of thousands of genes are responsible for wiring the mammalian brain and contributing to its function and the behavior of an organism

Summary of Points (Pt.2)

- Identifying anatomical features such as head shape, coat length, coat color, body size, musculature only indicate that the genetic signals encoding those traits are contained in a dog's genome
- There is no scientific basis for assuming that shared anatomical features among dogs correlates with shared brain organization or behavior – in fact there is very strong scientific, genetic and neuroscience evidence against this view

Summary of Points (Pt.3)

- Breeds were designed to conform to a physical breed standard. Subsequently, the stratification of dog breeds resulted in breed members sharing key anatomical / morphological traits.
- The genetic basis for the sharing of these anatomical traits is well described by researchers from MIT and Harvard and NIH who have systematically sequenced the dog genome and determined that roughly 50 genes are responsible for breed associated differences in appearance

Summary of Points (Pt.4)

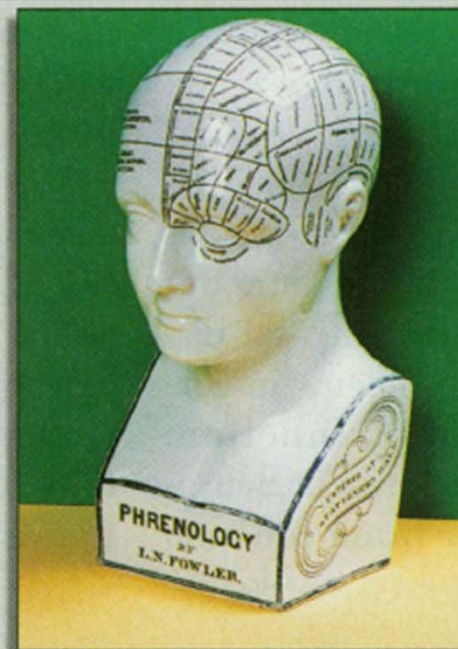
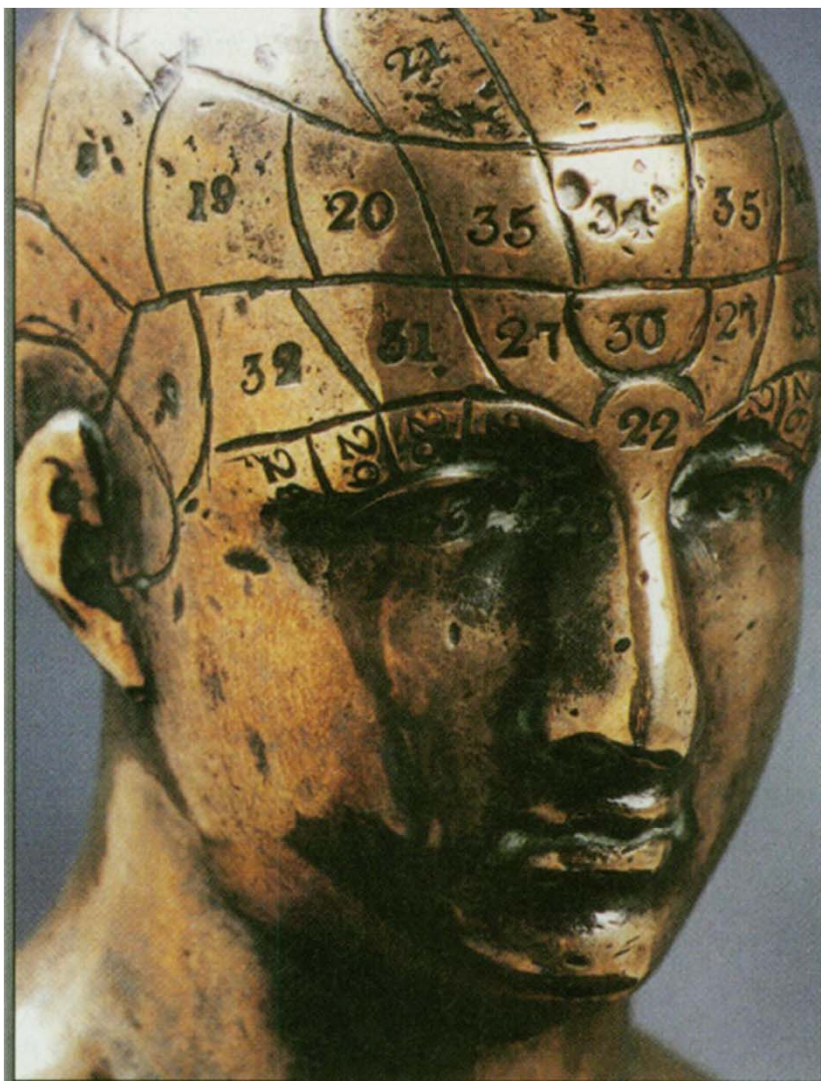
- Dogs visually identified as dangerous breeds are identified on the basis of specific anatomical traits that are encoded by a handful of genes
- The genes associated with morphological traits of dogs visually identified as dangerous dogs are not involved in the development, wiring, organization or function of the dog's brain
- Recent studies have identified over 17,000 genes within hundreds of anatomical regions of the mammalian brain. This complex organ and molecular system can not be inferred from tens of genes encoding head shape, snout length, body size and coat color/texture

Summary of Points (Pt.5)

- The accurate identification of breeds within mixed breed dogs is impossible because only 50 or so genes out of almost 20,000 genes in the dog genome control the external physical appearance of domestic dogs.
- $50 \text{ genes} / 20,000 \text{ genes} = 0.25\%$
- LESS THAN 1% OF THE DOG'S GENOME ENCODES IT'S BREED ASSOCIATED PHYSICAL TRAITS

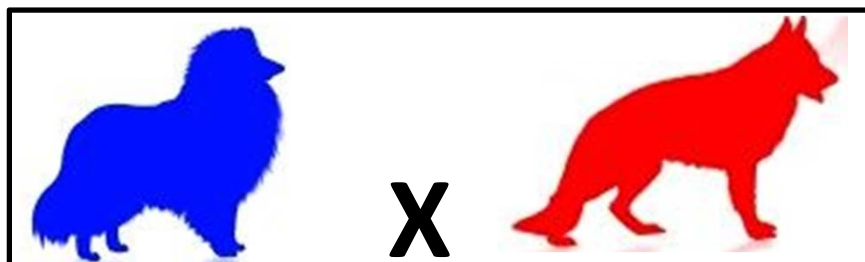
Summary of Points (Pt.6)

- The notion that one can infer dangerous neurological structures in a mammalian brain OR dangerous motivations on the basis of anatomical traits is not rational for three reasons:
 - 1. The genes encoding the anatomical traits do not encode the brain traits
 - 2. The presence of anatomical traits provides absolutely no inference about genes encoding behavioral traits
 - 3. Phrenology, the practice of inferring human personality traits from the shape of the skull was debunked at the turn of the 20th century and should not be the basis of 21st century laws

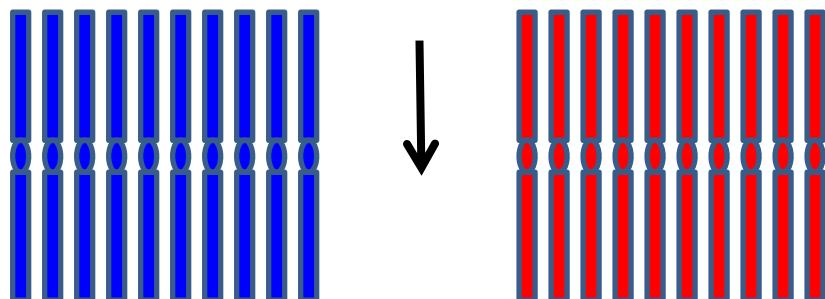


Earthenware phrenology head by L.N. Fowler: *The head stands 28 cm and bears the following inscription on the back: "For 30 years I have studied crania and living heads from all parts of the world, and have found in every instance that there is a perfect correspondence between the conformation of the healthy skull of an individual and his known characteristics. To make my observations available I have prepared a bust of superior form and marked the divisions of the organs in accordance with my researches and varied experience."*

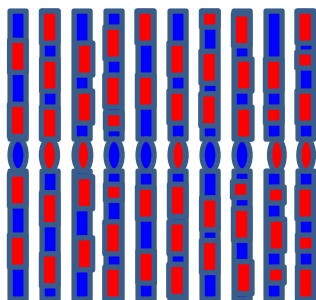
Phrenology was an attempt to infer personality traits from surface properties of the head



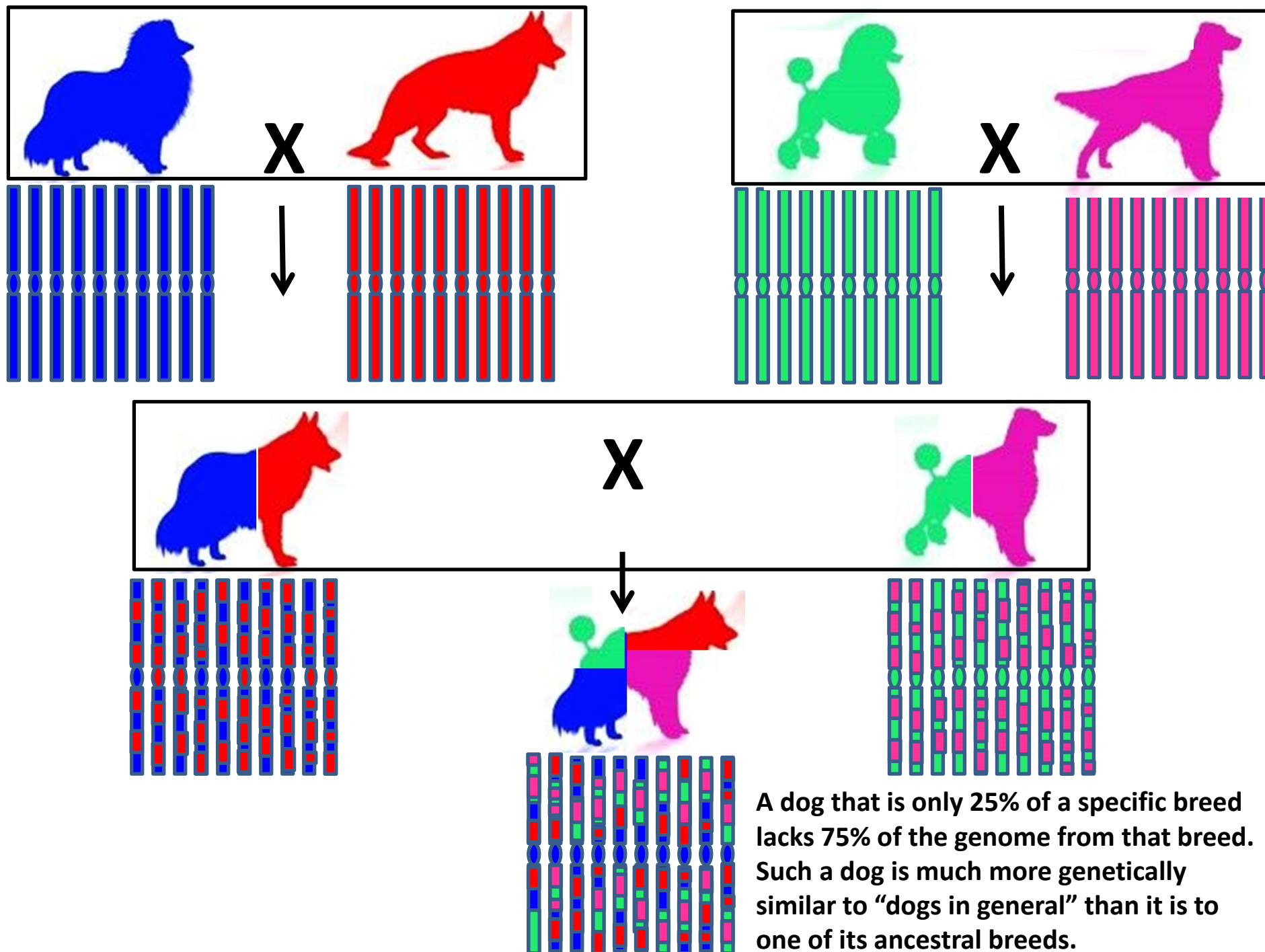
Offspring derive half of their DNA from each parent.

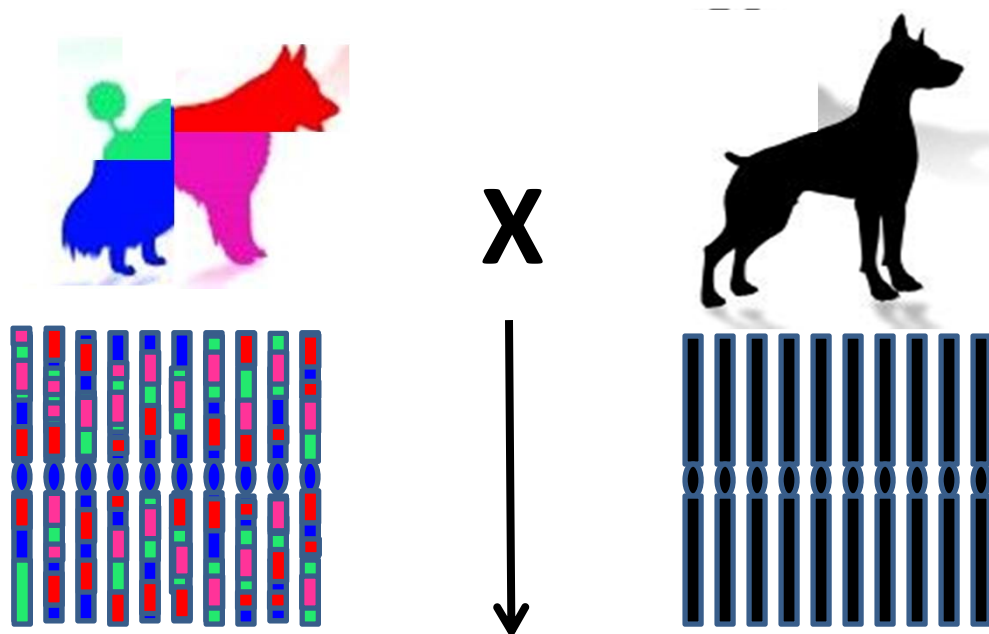


The reproductive cross of two different pure breeds will result in a dog that contains 50% of the DNA from each ancestral breed.



The offspring of this cross is NOT a member of either of the parental breeds as it lacks 50% of each parental breeds' DNA.





All five puppies in the litter have the same mixed breed proportions but each puppy has a distinctly unique genome derived from ancestors

